COLOR TELEVISION

SERVICE MANUAL

SERVICE MANUAL SERVICE MANUAL

FL-M2601

Functional Board List LCD/Plasma Televisions

Please note that this BOM list may vary from the original documentation. This part list supersedes the parts list contained within the body of the service manual. Please reference the part numbers below when ordering replacement boards of the servicing of this model.

If you require additional technical support, please contact our Tech Support line at **1-866-396-6322**

Model	Part Number	Description	Boards
FLM-2601	667-L23K6-56R	CPU Board	1
	667-L27K6-05	Keypress Board	1
	667-L27K6-09	IR Receive Board	1
	667-L27K6-15	Sound Amp Board	1
	667-L27K6-40	Video Processing Board	1
	667-L27M6-20C	Power Supply Board	1
	301-DL26K7-01A	Remote RC-D01-0A	1
	615-10429-03	Stand Assy	1

Attention: This service manual is only for service personnel to take reference with. Before servicing please read the following points carefully.

Safety instructions

1. Instructions

Be sure to switch off the power supply before replacing or welding any components or inserting/plugging in connection wire Anti static measures to be taken (throughout the entire production process!):

a) Do not touch here and there by hand at will;

b) Be sure to use anti static electric iron;

c) It's a must for the welder to wear anti static gloves.

Please refer to the detailed list before replacing components that have special safety requirements. Do not change the specs and type at will.

2. Points for attention in servicing of LCD

2.1 Screens are different from one model to another and therefore not interchangeable. Be sure to use the screen of the original model for replacement.

2.2 The operation voltage of LCD screen is 700-825V. Be sure to take proper measures in protecting yourself and the machine when testing the system in the course of normal operation or right after the power is switched off. Please do not touch the circuit or the metal part of the module that is in operation mode. Relevant operation is possible only one minute after the power is switched off.

2.3 Do not use any adapter that is not identical with the TV set. Otherwise it will cause fire or damage to the set.

2.4 Never operate the set or do any installation work in bad environment such as wet bathroom, laundry, kitchen, or nearby fire source, heating equipment and devices or exposure to sunlight etc. Otherwise bad effect will result.

2.5 If any foreign substance such as water, liquid, metal slices or other matters happens to fall into the module, be sure to cut the power off immediately and do not move anything on the module lest it should cause fire or electric shock due to contact with the high voltage or short circuit.

2.6 Should there be smoke, abnormal smell or sound from the module, please shut the power off at once. Likewise, if the screen is not working after the power is on or in the course of operation, the power must be cut off immediately and no more operation is allowed under the same condition.

2.7 Do not pull out or plug in the connection wire when the module is in operation or just after the power is off because in this case relatively high voltage still remains in the capacitor of the driving circuit. Please wait at least one minute before the pulling out or plugging in the connection wire.

2.8 When operating or installing LCD please don't subject the LCD components to bending, twisting or extrusion, collision lest mishap should result.

2.9 As most of the circuitry in LCD TV set is composed of CMOS integrated circuits, it's necessary to pay attention to anti statics. Before servicing LCD TV make sure to take anti static measure and ensure full grounding for all the parts that have to be grounded.

2.10 There are lots of connection wires between parts behind the LCD screen. When servicing or moving the set please take care not to touch or scratch them. Once they are damaged the screen

would be unable to work and no way to get it repaired.
2.11 Special care must be taken in transporting or handling it. Exquisite shock vibration may lead to breakage of screen glass or damage to driving circuit. Therefore it must be packed in a strong case before the transportation or handling.
2.12 For the storage make sure to put it in a place where the environment can be controlled so as to prevent the temperature and humidity from exceeding the limits as specified in the manual. For prolonged storage, it is necessary to house it in an anti-moisture bag and put them altogether in one place. The ambient conditions are tabulated as follows:

Temperature	Scope for operation	0 ~ +50 ^{o}C
	Scope for storage	-20 ~ +60 ^{o}C
humidity	Scope for operation	20% ~ 85%
	Scope for storage	10% ~ 90%

2.13 Display of a fixed picture for a long time may result in appearance of picture residue on the screen, as commonly called “ghost shadow”. The extent of the residual picture varies with the maker of LCD screen. This phenomenon doesn’t represent failure. This “ghost shadow” may remain in the picture for a period of time (several minutes). But when operating it please avoid displaying still picture in high brightness for a long time.

3. Points for attention during installation

3.1 The front panel of LCD screen is of glass. When installing it please make sure to put it in place.
3.2 For service or installation it’s necessary to use specified screw lest it should damage the screen.
3.3 Be sure to take anti dust measures. Any foreign substance that happens to fall down between the screen and the glass will affect the receiving and viewing effect
3.4 When dismantling or mounting the protective partition plate that is used for anti vibration and insulation please take care to keep it in intactness so as to avoid hidden trouble.
3.5 Be sure to protect the cabinet from damage or scratch during service, dismantling or mounting.

Alignment instruction

1 Alignment equipment

PM5518 (video signal generator)

K-7253 (VGA signal generator)

CA210 (white balancer)

2 Alignment flow-chart

The alignment flow-chart is shown as fig-1

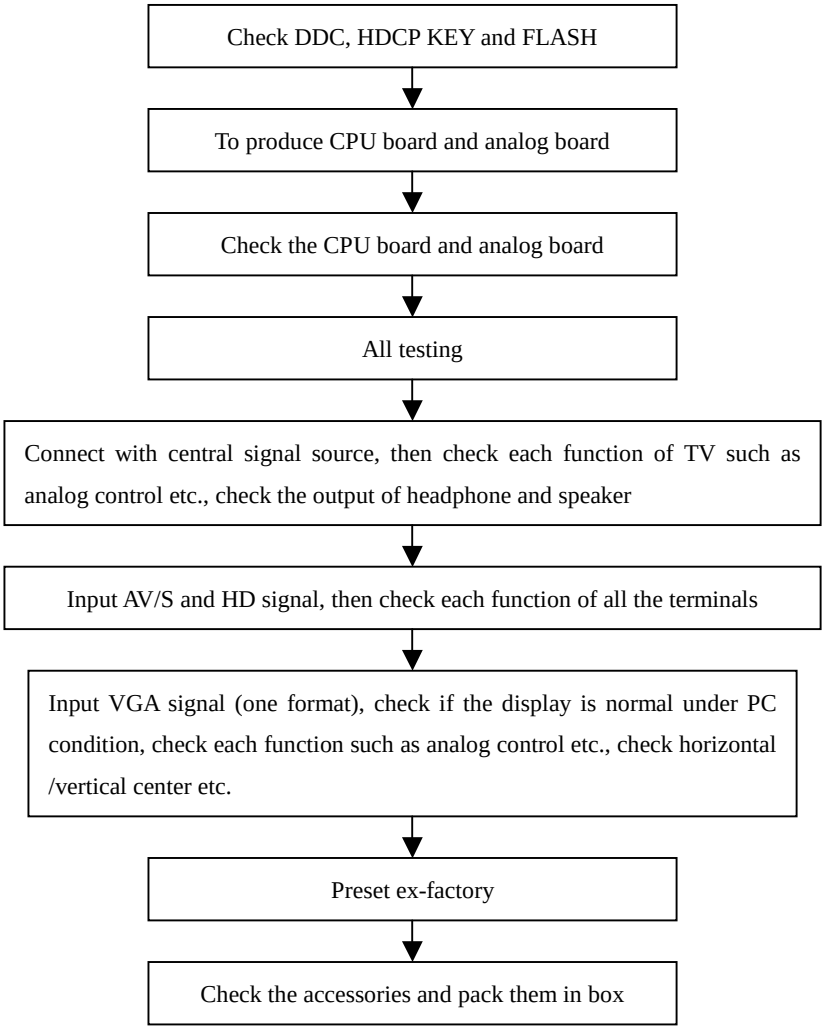

Check DDC, HDCP KEY and FLASH
To produce CPU board and analog board
Check the CPU board and analog board
All testing
Connect with central signal source, then check each function of TV such as analog control etc., check the output of headphone and speaker
Input AV/S and HD signal, then check each function of all the terminals
Input VGA signal (one format), check if the display is normal under PC condition, check each function such as analog control etc., check horizontal /vertical center etc.
Preset ex-factory
Check the accessories and pack them in box

Fig-1 adjustment flow-chart

3 Unit adjustment

Connect CPU board and analog board according to wiring diagram of 203-L23K70-01JL, connect with power and observe the display.

Method for entering factory menu: press “VOL+”, “MUTE” and “VIDEO” repeatedly to enter factory menu; press “ENTER” to select different items when the first line of each adjustment item just lights up; input VGA and DVI signal, then select the “mode” item; after that, you can press “enter” to select three kinds of color temperature namely 6500K, 9300K and 12000K press “MENU” to exit.

Note: the white balance adjustment should be done under “nature” picture mode.

3.1 EEPROM initialization

Enter the first page of factory menu, select “clear eeprom” and then press “enter”, shut down the unit after “ok” appears.

3.2 VGA/DVI channel adjustment

3.2.1 Preset VGA channel mode

Input VGA signal (PATTERN 5: Final Test) of K-7253, select TIME301(640*350/70Hz), press “AUTO” to do the auto adjustment until the screen is filled with picture. Use the same method to do auto adjustment for the following items:

TIME302 (720*400/70Hz)	TIME303 (640*480/60Hz)	TIME311 (800*600/60Hz)
TIME313 (1024*768/60Hz)	TIME315 (640*480/75Hz)	TIME316 (800*600/75Hz)
TIME317 (1024*768/75Hz)	TIME319 (1280*1024/75Hz)	TIME339 (1280*1024/60Hz)

3.2.2 ADC adjustment of VGA channel

Input K-7253 64 level gray-scale signal of TIME311 and PATTERN474, adjust ADC-gain to its maximal (not above 18) to let the brightest two levels can be recognized.

3.2.3 White balance adjustment VGA/DVI channel

Input K-7253 64 level gray-scale signal of TIME311 and PATTERN474, enter white balance adjustment menu; adjust the third and seventh levels using white balance.

Select 6500k of “mode”, adjustment offset_R, offset_G and offset_B, let the color coordinate of the third level be 308 and 316 and its brightness be 12.5nit more or less. Adjust gain_R, gain_G and gain_B, let the color coordinate of seventh level be 308 and 316.Adjustment offset_R, offset_G, offset_B, gain_R, gain_G and gain_B repeatedly until the value of the two levels gray-scale be 308 and 316.

Select 9300k of “mode”, adjustment offset_R,offset_G and offset_B,let the color coordinate of the third level be 285 and 290 and its brightness be 12.5nit more or less. Adjust gain_R,gain_G and gain_B, let the color coordinate of seventh level be 285 and 295.

Select 12000k of “mode”, adjustment offset_R, offset_G and offset_B, let the color coordinate of the third level be 270 and 283 and its brightness be 12.5nit more or less. Adjustment offset_R, offset_G, offset_B, gain_R, gain_G and gain_B repeatedly until the value of the two levels gray-scale be 270 and 283.

Note: gain_R, gain_G, gain_B is value not above 128 and let its value 128 at least.

3.3 Adjustment TV channel

3.3.1 Adjustment VCO, OPTION, sub-brightness and sub-contrast

input AV color bar signal(PM5518 COLOR BAR 100%) to VIDEO 1 terminal,enter the first page of factory menu, press “enter” selecting “auto color” display “OK” after 2 seconds, then you can finish the VCO adjustment; set the value of “option” to 9 and s-bright to 150 as well as S-contrast to 140. set the MaxVolume according to its product standard. Set value of page VPC3230 to 0,0,3,3,3,3,0.

3.3.2 white balance adjustment of TV channel

Input AV signal (PM5518, NTSC system, 8 level gray-scale signal), enter adjustment menu of white balance, adjust the third level and seventh level using white balance. Adjust offset_R, offset_G and offset_B to let color coordinate of the third level be 285 and 290 and its brightness be about 12.5nit. fixate gain_B, adjust gain_R, gain_G to color coordinate of the seventh level be 285 and 290. adjust

offset_R, offset_G,offset_B, gain_R and gain_G, repeatedly using the same method until the value of the two levels gray-scale be the specified value.

3.4 white balance adjustment YPbPr channel
input YpbPr signal of K-7253 to YPbPr-1 terminal, input TIME380(480i) PATTERN471 8 level gray-scale signal, set the value of S-bright to 120 and S-contrast to 140.Enter adjustment menu of white balance, adjust the third level using white balancer. Adjust offset_R, offset_G and offset_B, to let color coordinate of the third level be 285 and 290 and its brightness be about 12.5nit.
Input 8 level gray-scale signal of TIME392(480p), TIME394(720p) and TIME396(1080i) separately, repeat the above operations to let color coordinate of the third level be 285 and 290 and its brightness be about 12.5nit.

4 Performance check

4.1 TV function
Enter searching menu → auto search, connect RF-TV terminal with central signal source and check if there are channels be skipped
4.2 AV/S, YpbPr terminals
Input AV/S, HD signal, check if it is normal.
4.3 VGA terminal
Insert VGA terminal, input VGA format signal of 640 X 480@60 Hz, check if the display is normal. If interference exists, press the auto adjust button on remote control again and check if it is normal.
4.4 DVI terminal
Insert DVI terminal, input signal of 640 X 480@60 Hz signal and check if the display is normal.
4.5 check sound channel
Check the speaker and headphone of each channel.
4.6 presetting before ex-factory

item	setting
Picture mode	NATURE
Sound mode	NEWS
N/R	WEAK
SCREEN	16:9

item	setting
OSD language	English
VGA color temperature	12000
SPEAKER	ON
HEAD PHONE	ON

item	setting
BALANCE	50
SRS	OFF
CCD	OFF
Turn off	TV

Trouble shooting

Before servicing please check to find the possible causes of the troubles according to the table below.

1.Antenna(signal):

Picture is out of focus or jumping	● Bad status in signal receiving ● Poor signal ● Check if there are failures with the electrical connector or the antenna. ● Check if the antenna is properly connected.

Fringe in picture	● Check if the antenna is correctly oriented. ● Maybe there is electric wave reflected from hilltop or building.
Picture is interfered by stripe shaped bright spots	● Possibly due to interference from automobile, train, high voltage transmission line, neon lamp etc. ● Maybe there is interference between antenna and power supply line. Please try to separate them in a longer distance. ● Maybe the shielded-layer of signal wire is not connected properly to the connector.
There appear streaks or light color on the screen	● Check if interfered by other equipment and if interfered possibly by the equipment like transmitting antenna, non professional radio station and cellular phone.

2.TV set:

Symptoms	Possible cause
Unable to switch the power on	● Check to see if the power plug has been inserted properly into the socket.
No picture and sound	● Check to see if the power supply of liquid crystal TV has been switched on. (as can be indicated by the red LED at the front of the TV set) ● See if it's receiving the signal that is transmitted from other source than the station ● Check if it's connected to the wrong terminal or if the input mode is correct. ● Check if the signal cable connection between video frequency source and the liquid crystal TV set is correct.
Deterioration of color phase or color tone	● Check if all the picture setups have been corrected.
Screen position or size is not proper	● Check is the screen position and size is correctly set up.
Picture is twisted and deformed	● Check to see if the picture-frame ratio is properly set up.
Picture color changed or colorless	● Check the "Component" or "RGB" settings of the liquid crystal TV set and make proper adjustment according to the signal types.
Picture too bright and there is distortion in the brightest area	● Check if the contrast setting is too high. ● Possibly the output quality of DVD broadcaster is set too high. ● It maybe also due to improper terminal connection of the video frequency signal in a certain position of the system.
Picture is whitish or too bright in the	● Check if the setting for the brightness is too high

darkest area of the picture	● Possibly the brightness grade of DVD player (broadcaster) is set too high.
No picture or signal produced from the displayer if “XXX in search” appears.	● Check if the cable is disconnected. ● Check if it’s connected to the proper terminal or if the input mode is correct.
There appears an indication - “outside the receivable scope)	● Check if the TV set can receive input signal. The signal is not correctly identified and VGA format is beyond the specified scope.
Remote control cannot work properly	● Check if the batteries are installed in the reverse order. ● Check if the battery is effective. ● Check the distance or angle from the monitor. ● Check if there is any obstruct between the remote control and the TV set. ● Check if the remote control signal- receiving window is exposed to strong fluorescence.
No picture and sound, but only hash.	● Check if the antenna cable is correctly connected, or if it has received the video signal correctly.
Blur picture	● Check if the antenna cable is correctly connected. ● Of if it has received the right video signal.
No sound	● Check if the “mute” audio frequency setting is selected. ● Check if the sound volume is set to minimum. ● Make sure the earphone is not connected. ● Check if the cable connection is loose.
When playing VHS picture search tape, there are lines at the top or bottom of the picture.	● When being played or in pause VHS picture search tape sometimes can’t provide stable picture, which may lead to incorrect display of the liquid crystal TV, In this case please press “auto” key on the remote control so as to enable the liquid crystal TV set to recheck the signal and then to display correct picture signal

Method of software upgrading

Steps of software upgrading are as follows:

1. Select a serial connection wire and a VGA connection wire and then connect them by means of a patch panel;

2. Use a serial wire to connect the PC to the patch panel and set TV set to off state;

Open the software upgrade file holder and double click

FlashUpgraderNT (use under window 2000/XP/NT)

FlashUpgrader (use under window 98),

The following interfaces will show up after running the program:

Based on the computer features, set up the serial port (COM Port). Select corresponding serial port (if it's unable to FLASH WRITE, change to another port). Baud is selected to be 115200. Then select Reset Target After Download. Click FLASH pushbutton, it's ready to run. For other settings, please refer to the Fig. Above (already defaulted by the system, normally no need to change).
Switch on TV set the FLASH write program begins to run;

After FLASH write is over, push button "cancel" will become flash. Then shut the main power supply and it's OK just switch it on again.

Note: Do not shut the power off or turn the TV set on during the FLASH write. Otherwise it may lead to no way for flash to rewrite.

LC-23K6 working principle analysis

Please refer to LC-23K6 BLOCK DIAGRAM in order to know the working principle of LC-23K6 brief introdection to its signal flow is shown as follows:

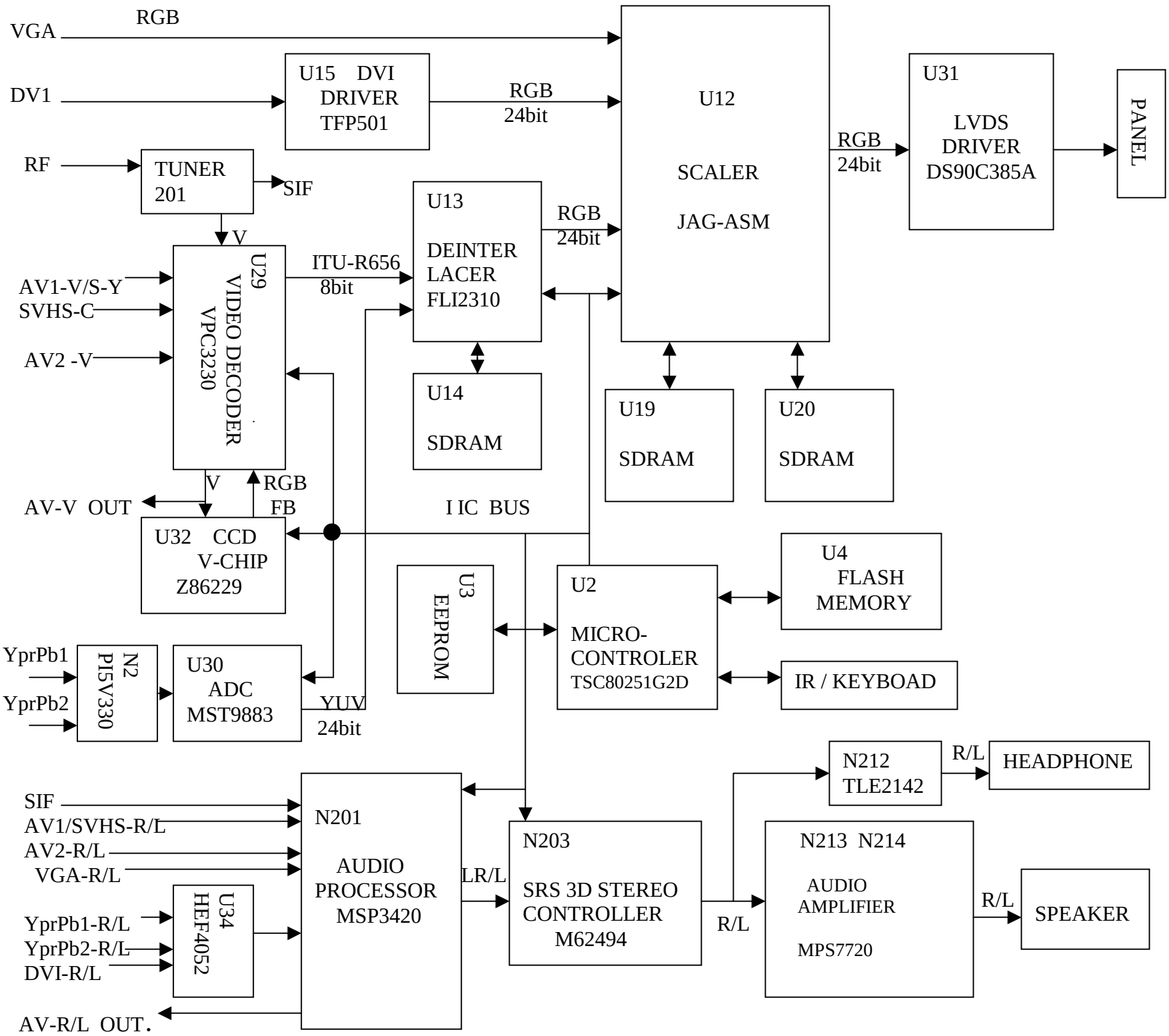
RF signal produces composite color television signal through TUNER201, the signal together with AV1/SVHS(SVHS priority), AV2 etc. are sent to U29 VPC3230D to decode and do switching selection. In addition to decode the selected video signal, part of the selected video signal is also sent to AV terminal and 21 line decoder U32 Z86229 which is exclusive to decode CCD/V-CHIP to decode. After decoded by U32, the signal will be sent back to U29 in the form of R G B and FB, then it will be added to the decoded picture and then it will be sent to U13 FL12310 in the form of ITU-R656 signal format of 8BIT to do line-by-line process.

Send two ways YPRPB signal to U30 MST9883 through selection by N2 PI5V330 in order to do the A/D conversion. After this, the signal will be converted into YUV signal of 24BIT, send it to FLI2310 also.

After a series of procedure such as matrix, chroma and tint etc. by FL12310, the two ways signal will be converted into RGB of 24bit, then send it to the main processing chip U12 JAG-ASM. send RGB signal it to the main processing chip U12 at the same time. There has another signal which should be sent to U12 together with he above two kinds of signal that is: RGB signal of 24BIT produced by DV1 through U15 TFP403/501. do the picture format processing for the three kinds of signal in U12. Firstly do the A/D conversion for RGB signal of VGA, then do the switching selection together with the other two kinds of signal. And then they will be converted into 1024*768 format through digital display processing such as OSD and GAMMA correction etc. output it in the form of 24BIT RGB signal. Send it to LVDS convertor U31 DS90C383A, then it will be converted into signal format which can be accepted by LCD screen namely 3 low-voltage differential signal and 1 clock signal, finally send it to LCD screen to do the picture display PWM of U12 can also be used to control the brightness of back light-source.

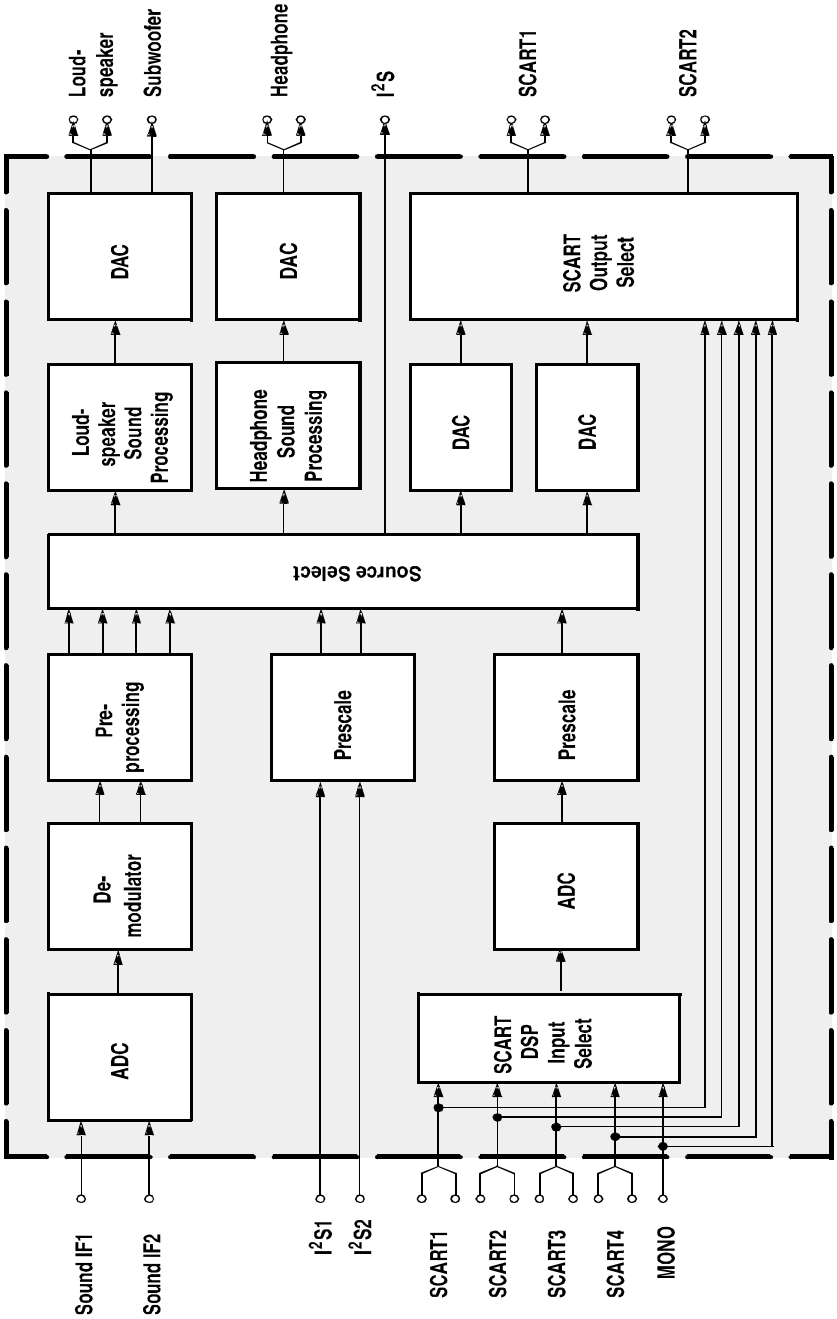
Send SIF (the second IF) outputted by tuner to audio processor N201 MSP3420; send YPRPB and audio signal of DVI to N201 through switching selection by U34 HEF4052; Send AV1/SVHS, AV2 and audio signal of VGA to N201 also. Firstly SIF will be done the switching selection together with another four ways of audio signal, finally volume control and sound effect processing will be done. Output left-right sound channel signal R/L. one will be sent to SRS sound field processor N203 M62494 to do SRS processing and finally amplified by N213 and N214 MP7720 to drive the speaker, one will be used to drive the headphone through N212 TLE2142 and the last part will be outputted as R/L of AV OUT.

LC-23K6 BLOCK DIAGRAM



IC block diagram

1.MSP3420



Pins description:

2,3 PIN: SCL,SDA applied for control the operation of IC .

27,28 PIN: output left and right sound channel R/L to speaker processor.

36,37 PIN:AV OUT of sound R/L.

47,48 PIN:D4-1/D4-2/PCMCIA selected input R/L.

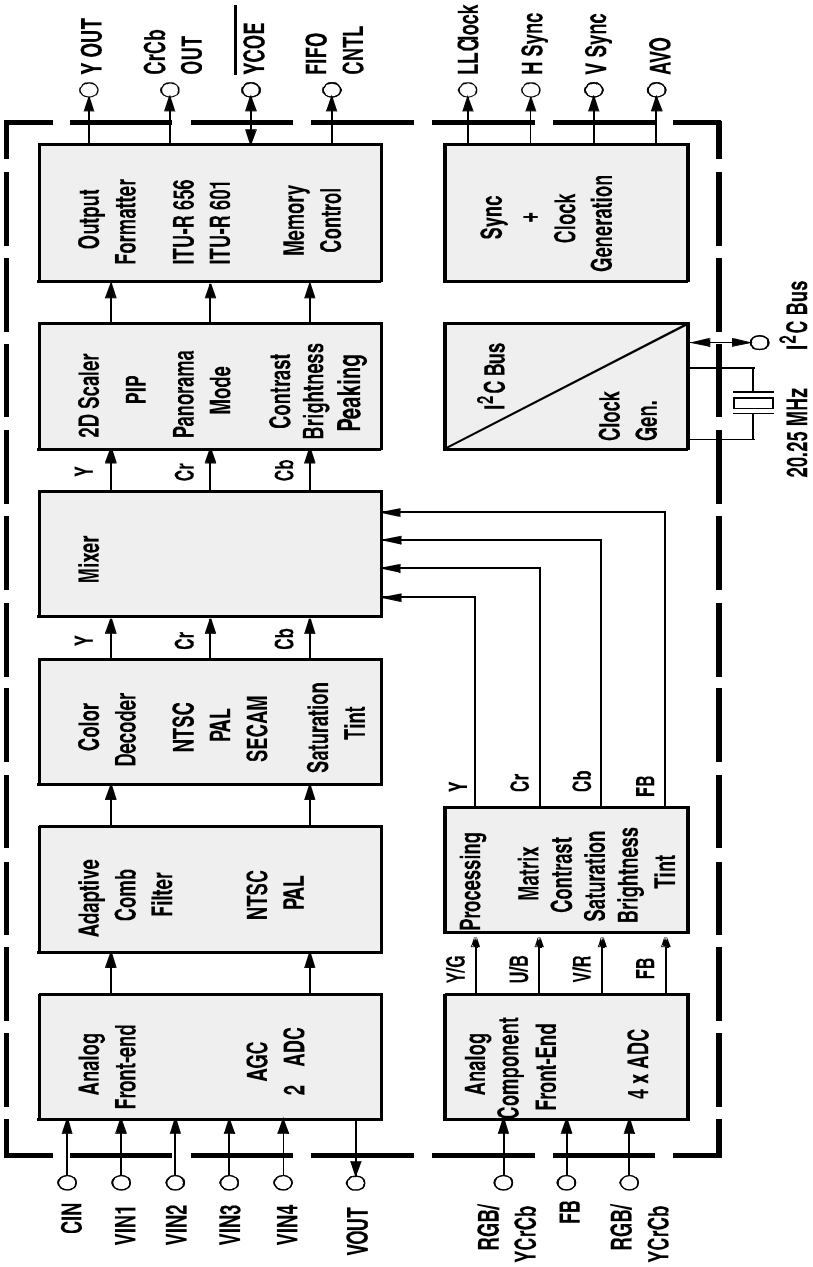
50,51 PIN:Input of VGA. R/L

53,54 PIN:Input of AV1/SVHS and AV2 R/L.

56,57 PIN:Input R/L of BS

67 PIN: Input TV SIF.

2.VPC3230



Pins description:

4 PIN: Input U of PCMCIA.

5,73 PIN: Input Y of PCMCIA.

6 PIN: Input V of PCMCIA

31-34, 37-40 PIN: output format signal of. ITU-R656

70 PIN:Video of AV OUT

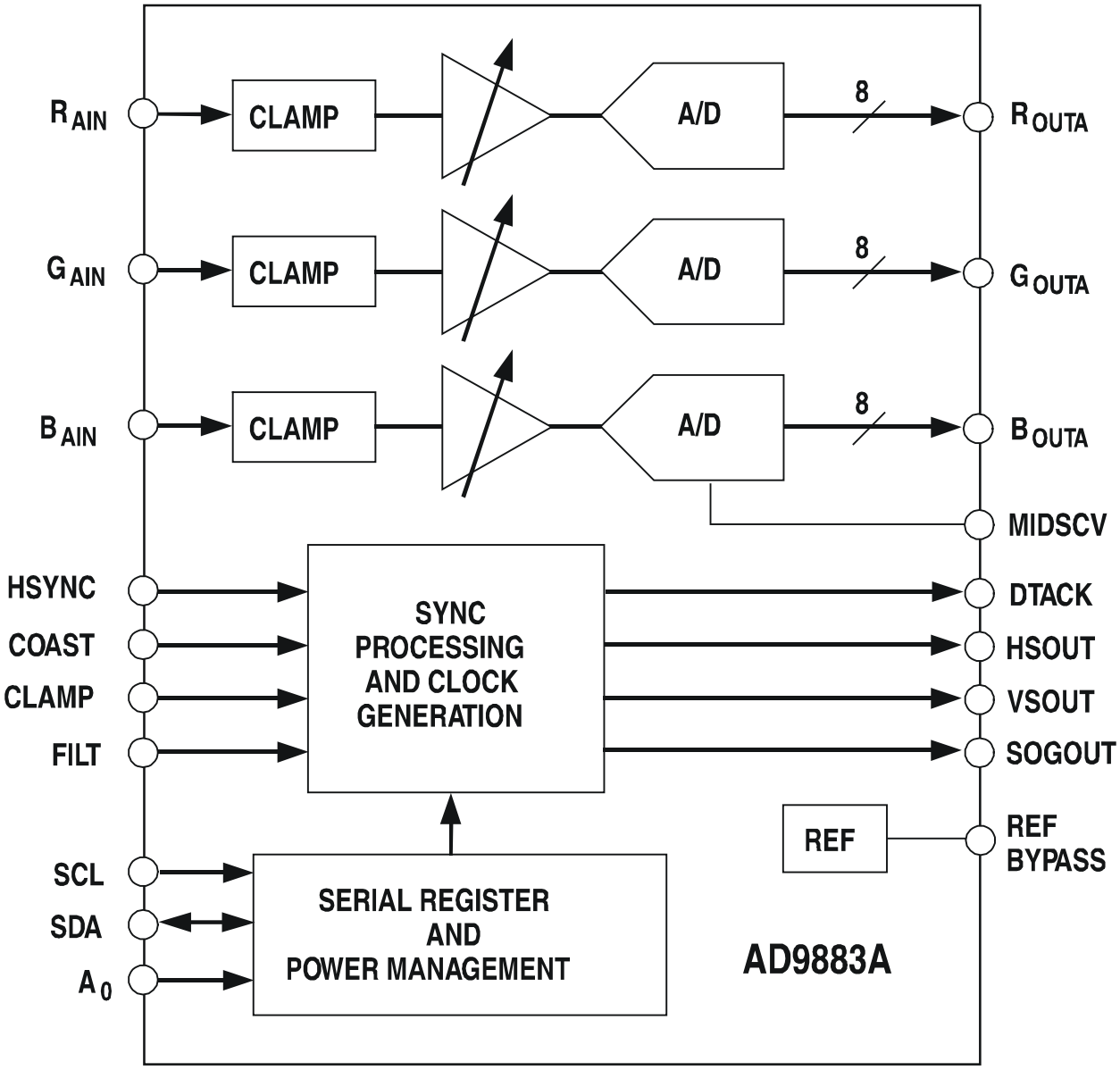
71 PIN:Input C of SVHS.

72 PIN:input Video (SVHS in priority) of Y or AV1 of SVHS.

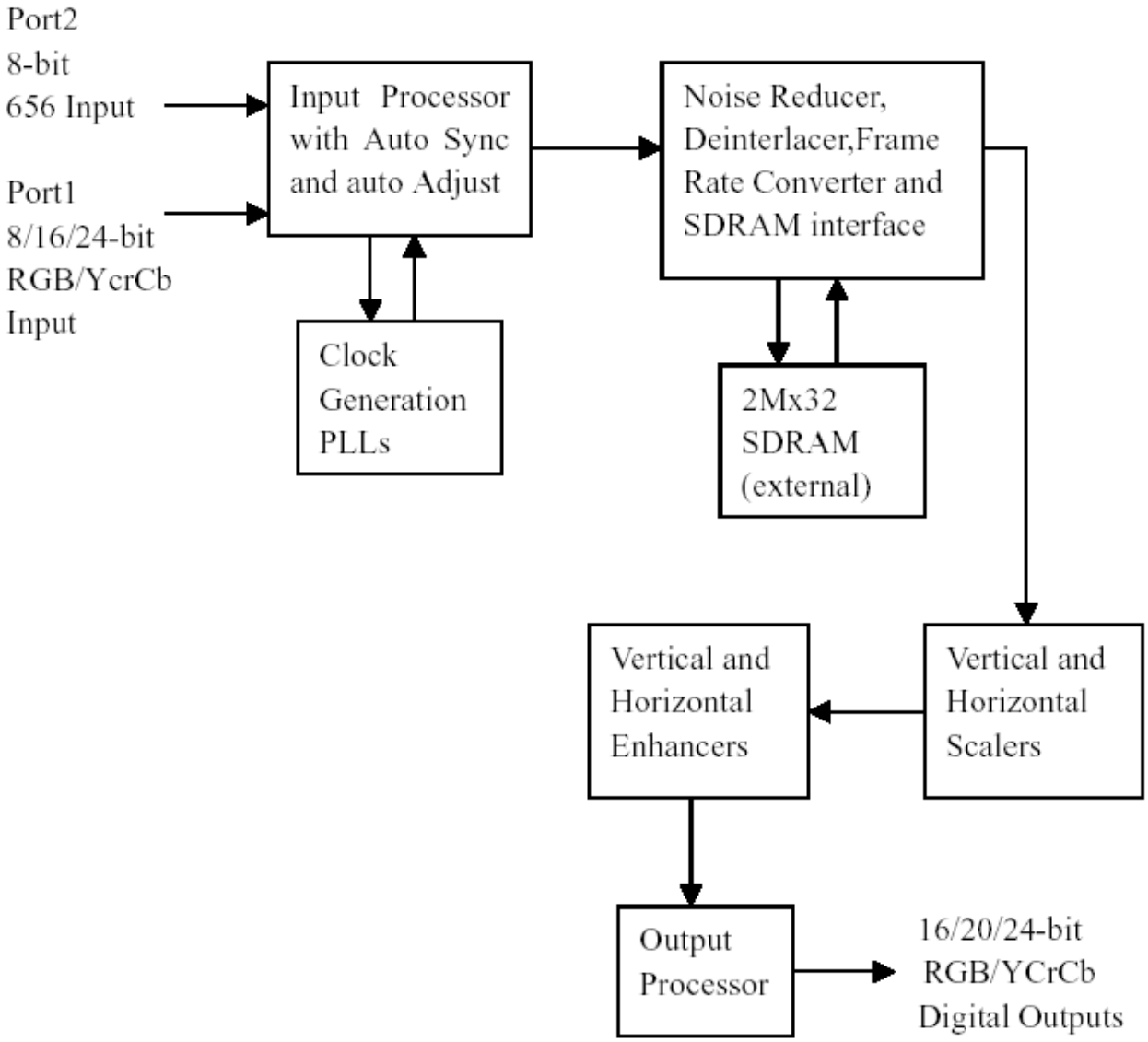
74 PIN:input Video of AV2.

75 PIN:input Video of TV/BS.

3.AD9883


R AIN
G AIN
B AIN
CLAMP
CLAMP
CLAMP
A/D
A/D
A/D
8
8
8
R OUTA
G OUTA
B OUTA
MIDSCV
HSYNC
COAST
CLAMP
FILT
SYNC
PROCESSING
AND CLOCK
GENERATION
DTACK
HSOUT
VSOUT
SOGOUT
REF
REF
BYPASS
SCL
SDA
A 0
SERIAL REGISTER
AND
POWER MANAGEMENT
AD9883A

4.FLI2310-Simplified Internal Block Diagram



5.JAG-ASM

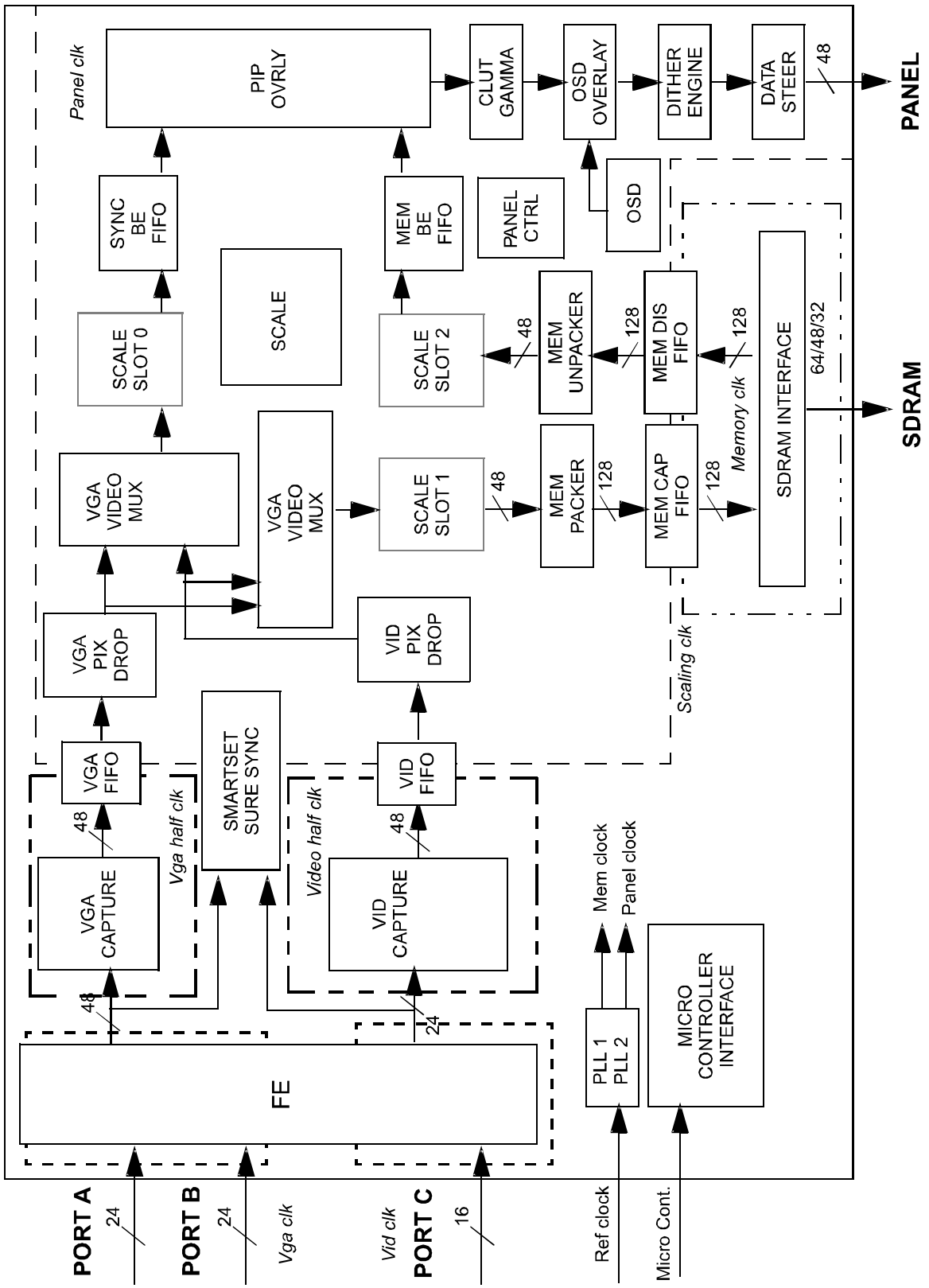


Figure 2. Functional Block Diagram

6.Z86229

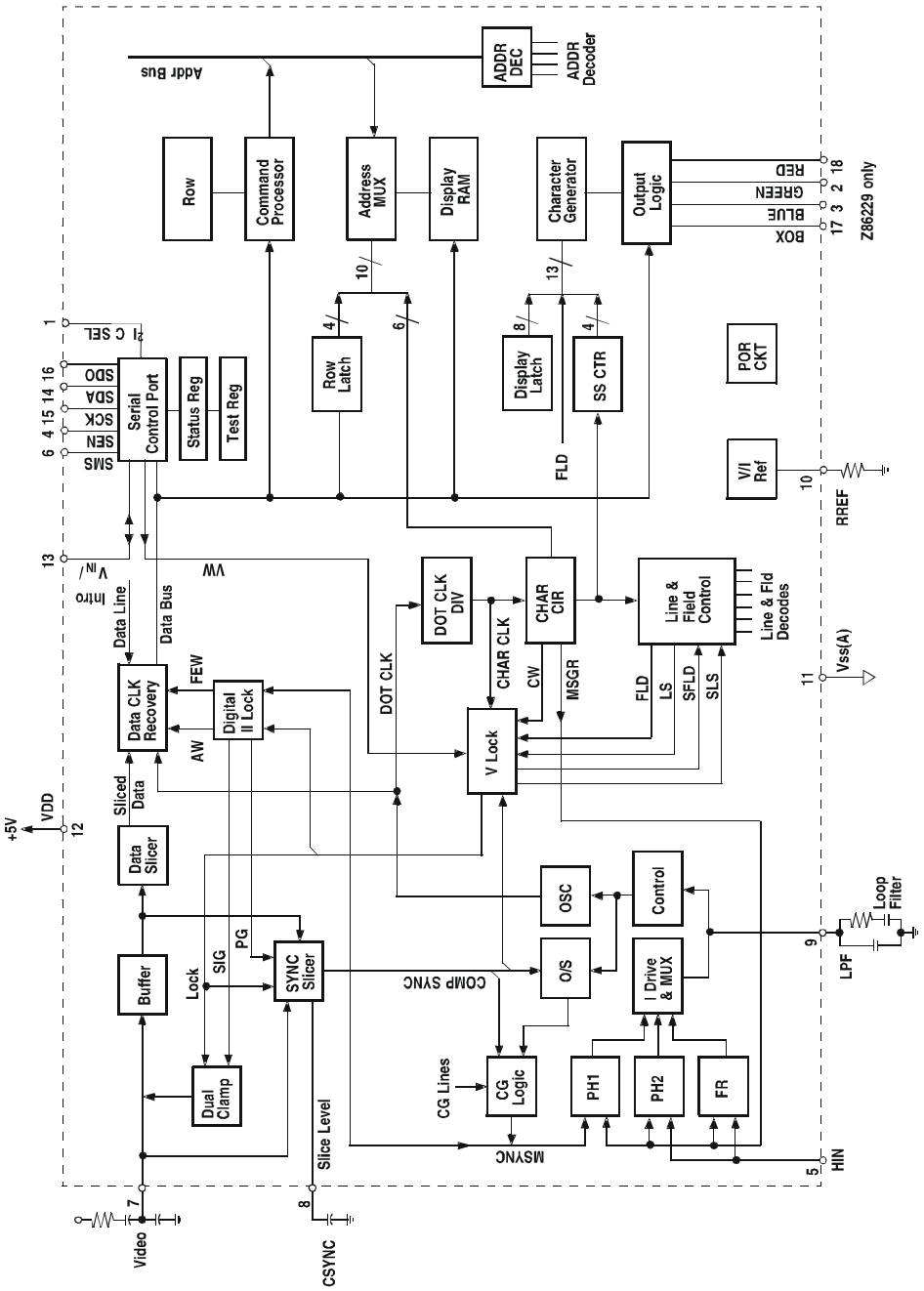


Figure 1. Z86229 Block Diagram

Pins description:

7 PIN: VDIEO INPUT

2 PIN: G OUTPUT

3 PIN: B OUTPUT

18 PIN: R OUTPUT

17 PIN: FB OUTPUT

Main assembly

NAME	NO.	MAIN COMPONENT AND it'S NO.		
Sound conversion board	667-L27K6-15	N201 N203 N213 N214	MSP3420G-Q M62494FP MP7720	(353-34200-10) (353-62494-20) (353-77200-10)
CPU board	667-L23K6-56R	U12 U13 U15 U29 U30 U31 U32 U2 U4	JAG-ASM FLI2310 TFP501 VPC3230D MST9883B DS90C385 Z8622912SS TSC80251G2D AT49F002NT	(353-0JAG0-00) (353-23100-00) (353-05010-00) (353-32300-80) (353-98830-10) (353-03850-20) (353-86229-10) (353-80251-10) (352-49002-70)
IR board	667-L27K6-09			
Keypad board	667-L27K6-05			
Video process board	667-L27K6-40			
Power supply board	667-L23K7-20	N904 V905	H11A817 SPP11N60C3	(352-08170-50) (343-00600-60)
Remote control (RC-U20R)	301-UL27K6-38RA			
Panel (LTA230W1-L02)	335-23002-00			

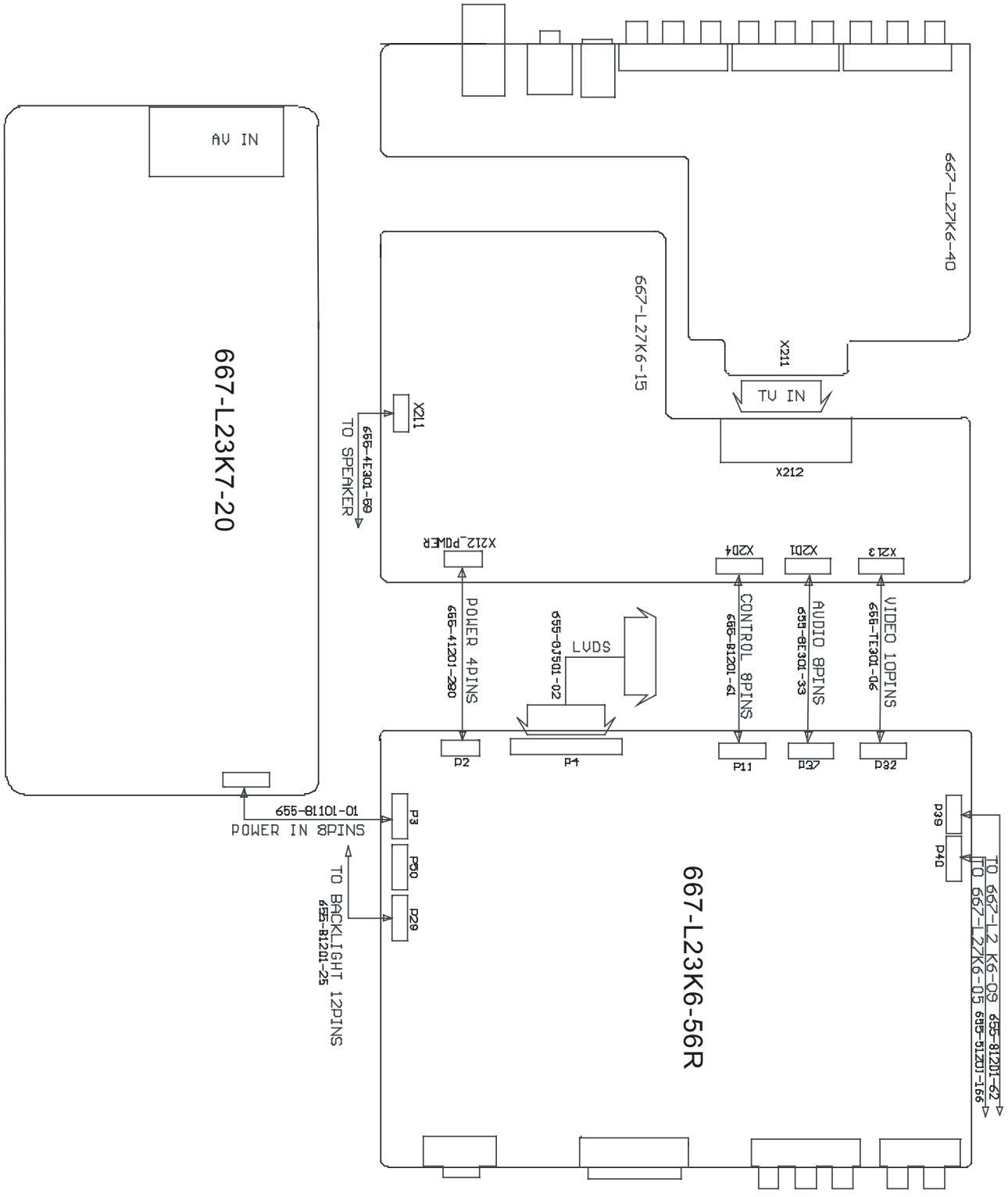
Identification criteria for the bright spot and dark spot of the LCD screen

<table>
<tr><td rowspan="2">Category</td><td rowspan="2">criteria</td><td colspan="5">Q’ty allowed</td><td colspan="5">Distance between two spots</td></tr>
<tr><td>15"</td><td>20"</td><td>22"</td><td>30"</td><td>40"</td><td>15"</td><td>20"</td><td>22"</td><td>30"</td><td>40"</td></tr>
<tr><td rowspan="3">Bright spot</td><td>One single spot</td><td>≤5</td><td>≤2</td><td>≤5</td><td>≤2</td><td>≤3</td><td rowspan="6">≥15mm</td><td colspan="4" rowspan="3">≥15mm</td></tr>
<tr><td>2 neighboring spots</td><td>≤2</td><td>≤1</td><td>≤2</td><td>≤1</td><td>≤1</td></tr>
<tr><td>Total No.</td><td>≤5</td><td>≤2</td><td>≤5</td><td>≤2</td><td>≤3</td></tr>
<tr><td rowspan="3">Dark spots</td><td>One single spot</td><td>≤6</td><td>≤7</td><td>≤5</td><td>≤4</td><td>≤10</td><td rowspan="3">≥10mm</td><td colspan="4" rowspan="3">≥5mm</td></tr>
<tr><td>Two neighboring spots</td><td>≤2</td><td>≤2</td><td>≤2</td><td>≤1</td><td>≤5</td></tr>
<tr><td>Total No.</td><td>≤6</td><td>≤7</td><td>≤5</td><td>≤4</td><td>≤10</td></tr>
<tr><td colspan="2">Total defected point</td><td>≤8</td><td>≤7</td><td>≤5</td><td>≤4</td><td>/</td><td colspan="5"></td></tr>
</table>

Notes:

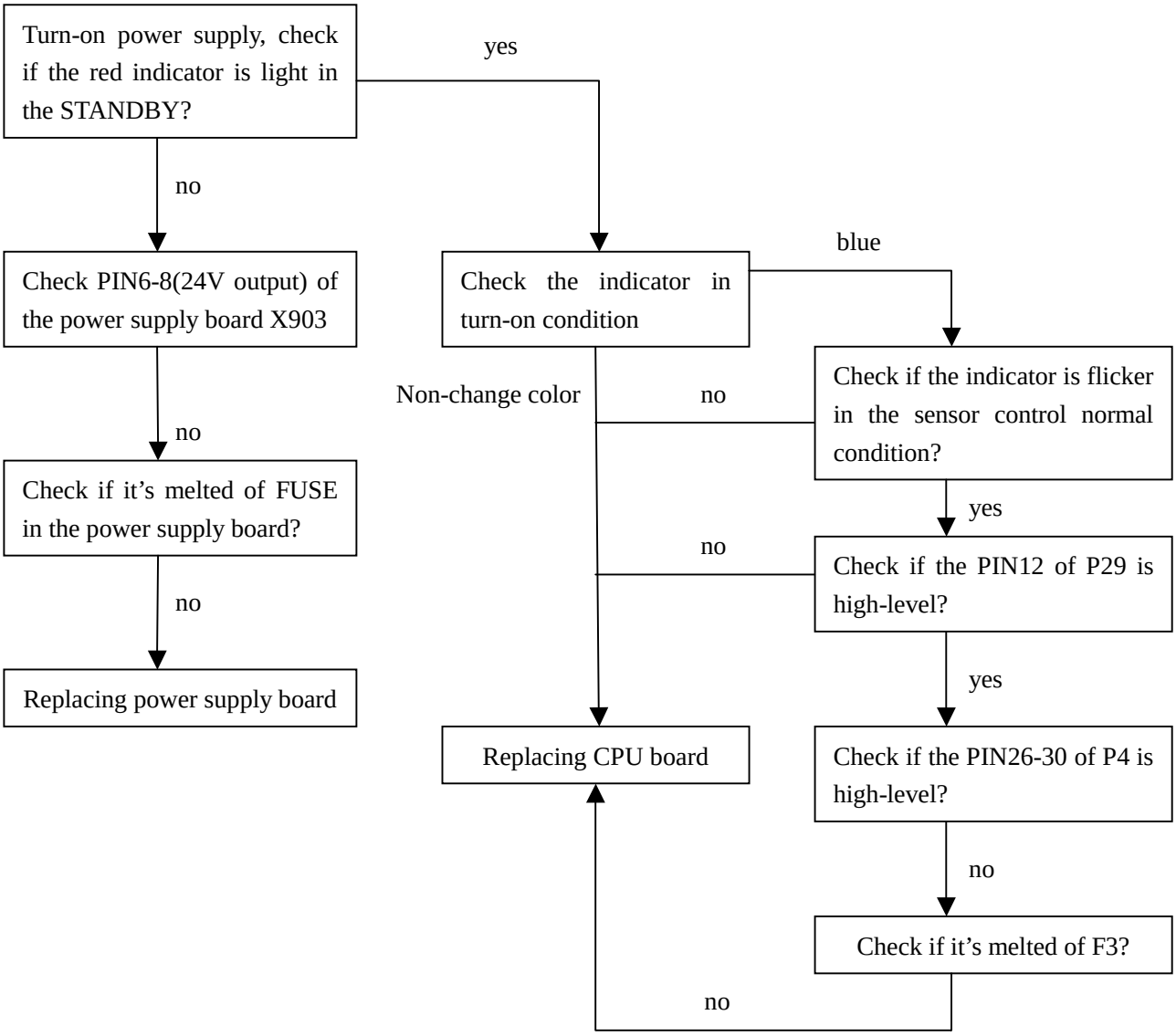
1. Definition of defected point (bright spot, dark spot): It is identified as a defected point if its area exceeds 1/2 of a single picture element (R,G,B).
2. Definition of bright spot: It is identified as a bright spot if it is bright in the state of dark field and its bright size remains unchanged
3. Definition of dark spot: It is identified as a dark spot if it is dark in the state of white field and its dark size remains unchanged
4. Definition of two neighboring points: Defects of a group of picture elements(RB,RG,GB).

Wiring diagram

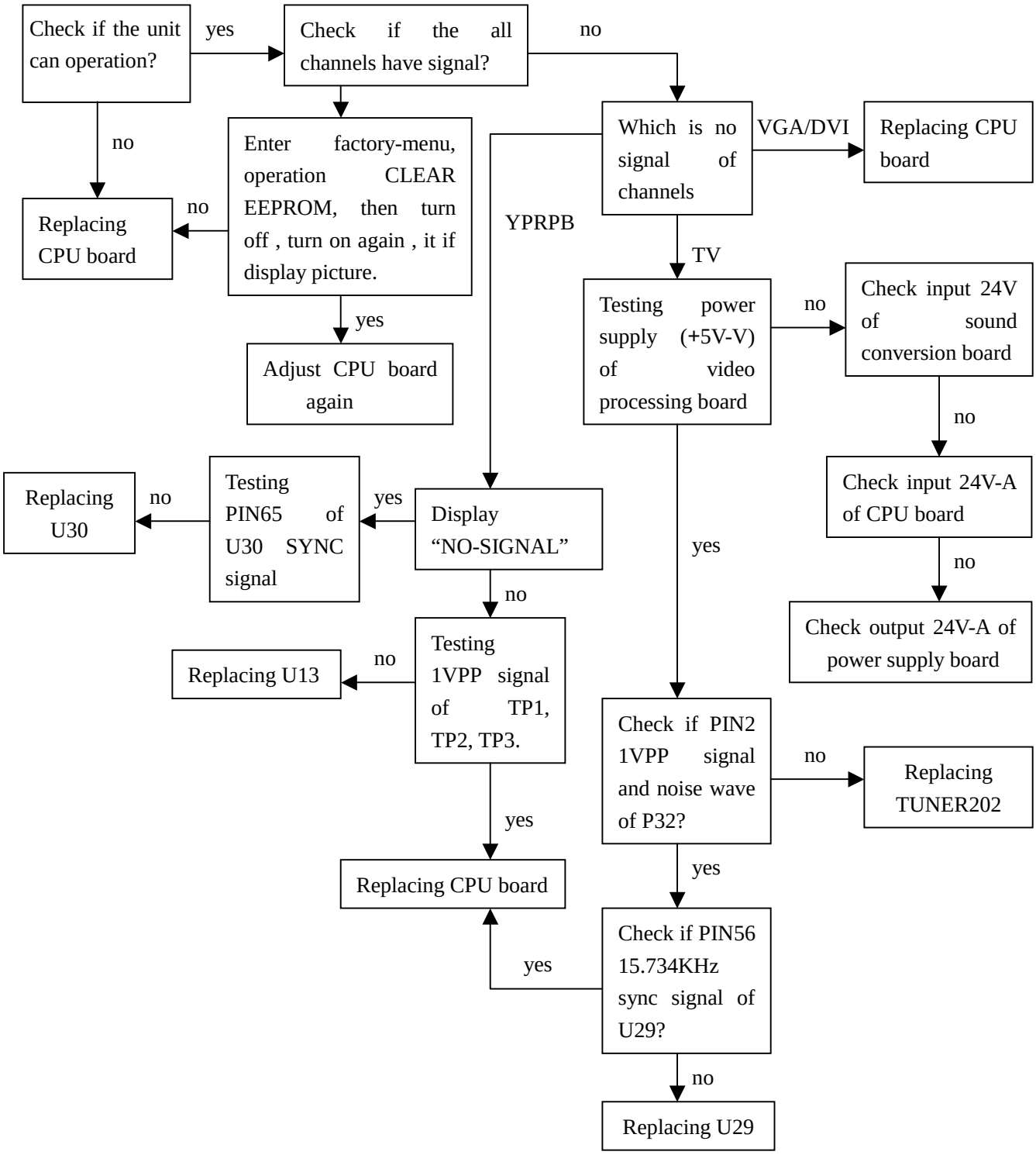


Troubleshooting guide

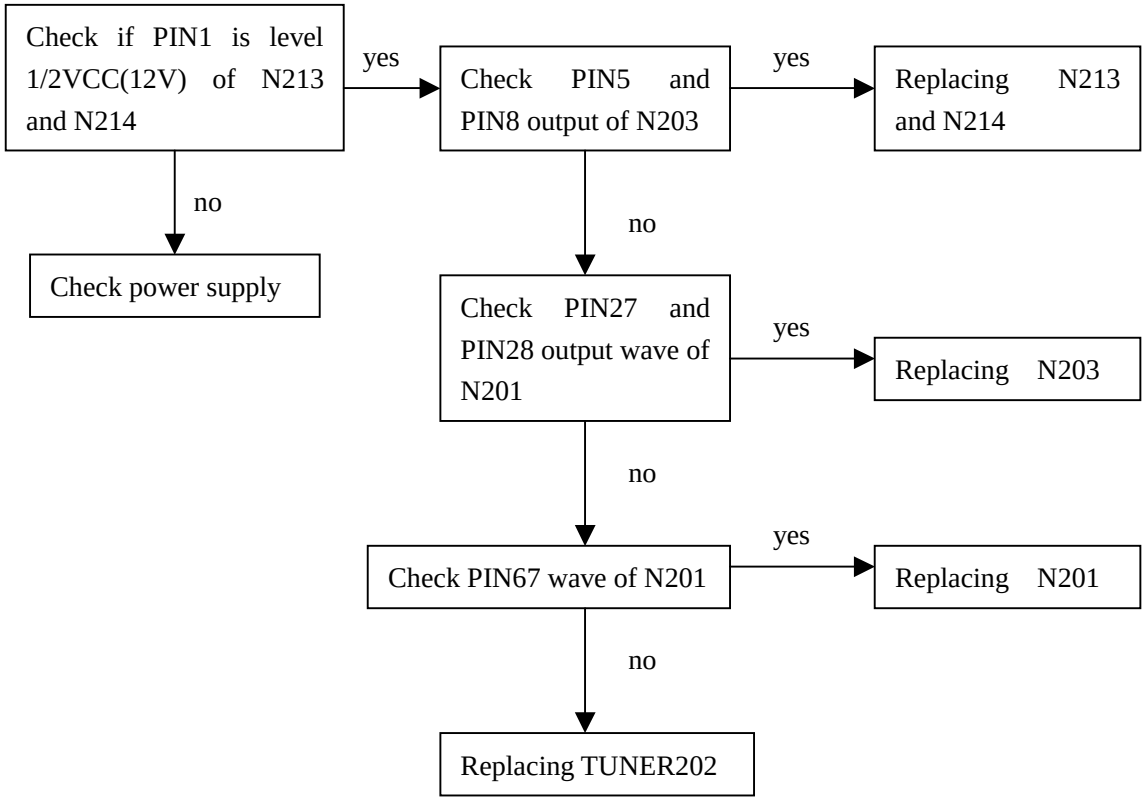
1. No raster


Turn-on power supply, check if the red indicator is light in the STANDBY?
yes
no
Check PIN6-8(24V output) of the power supply board X903
no
Check if it's melted of FUSE in the power supply board?
no
Replacing power supply board
Check the indicator in turn-on condition
blue
Non-change color
no
Check if the indicator is flicker in the sensor control normal condition?
yes
no
Check if the PIN12 of P29 is high-level?
yes
Replacing CPU board
Check if the PIN26-30 of P4 is high-level?
no
Check if it's melted of F3?
no

2. raster, but no picture



3.no sound


Check if PIN1 is level 1/2VCC(12V) of N213 and N214
yes
Check PIN5 and PIN8 output of N203
yes
Replacing N213 and N214
no
Check power supply
no
Check PIN27 and PIN28 output wave of N201
yes
Replacing N203
no
Check PIN67 wave of N201
yes
Replacing N201
no
Replacing TUNER202

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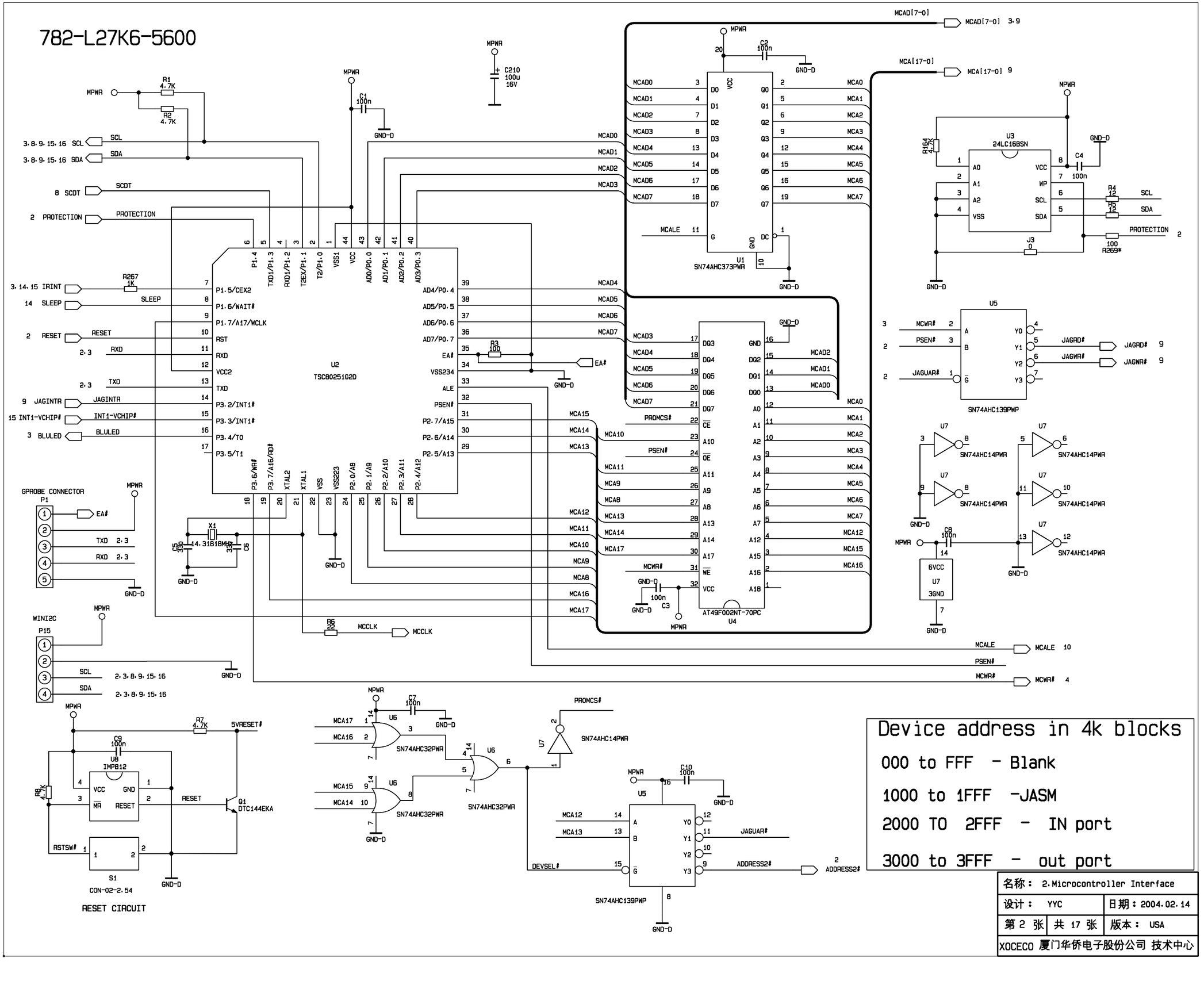


Device address in 4k blocks

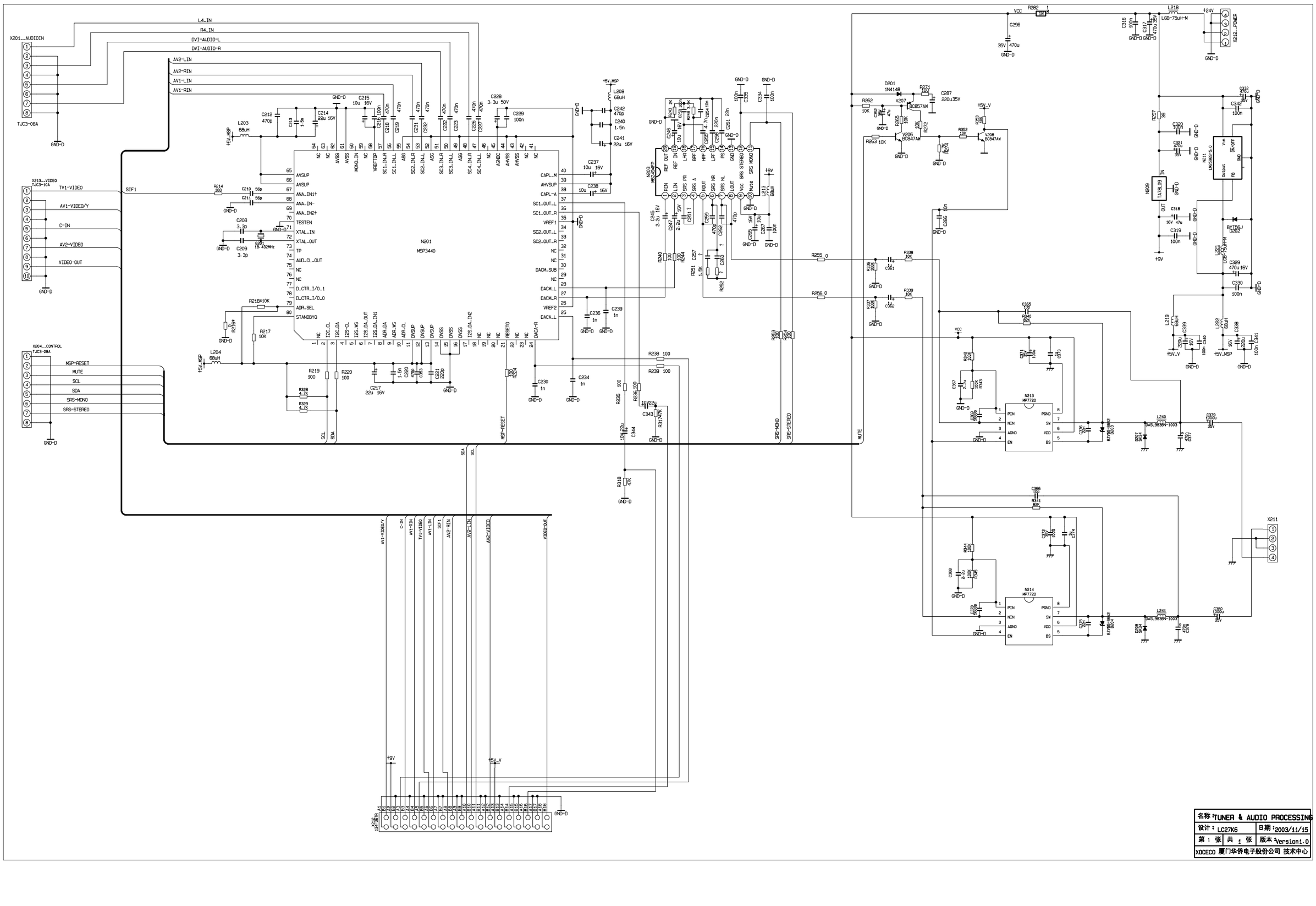
000 to FFF - Blank

1000 to 1FFF -JASM

2000 TO 2FFF - IN port

3000 to 3FFF - out port

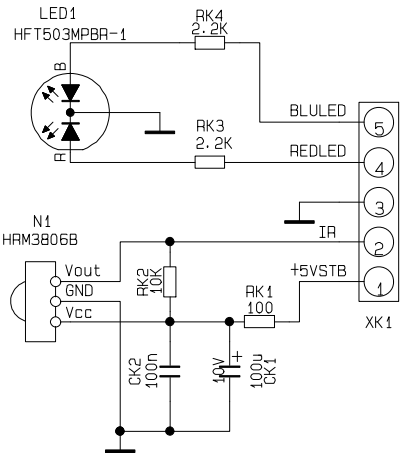
名称： 2.Microcontroller Interface		
设计： YYC		日期：2004.02.14
第 2 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		



名称：TUNER & AUDIO PROCESSING	
设计：LC27K6	日期：2003/11/15
第 1 张	共 1 张 版本：Version1.0
XOCECO 厦门华侨电子股份公司 技术中心	

A B C

1



2

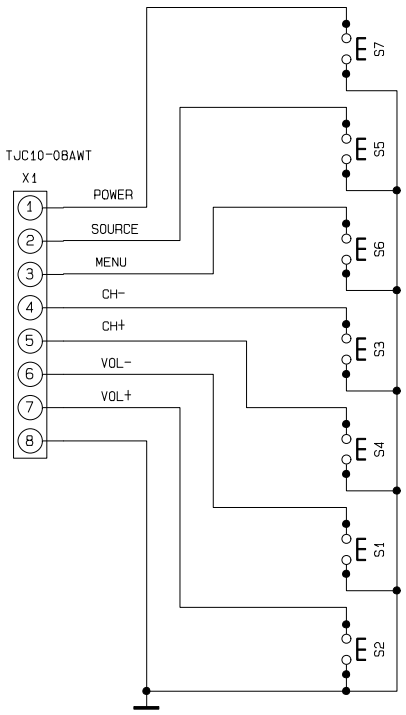
名称： IR&LED		
设计： YYC		日期：2004-02-25
第 1 张	共 1 张	版本：Version1.0
XOCECO 厦门华侨电子股份公司 技术中心		

A B C

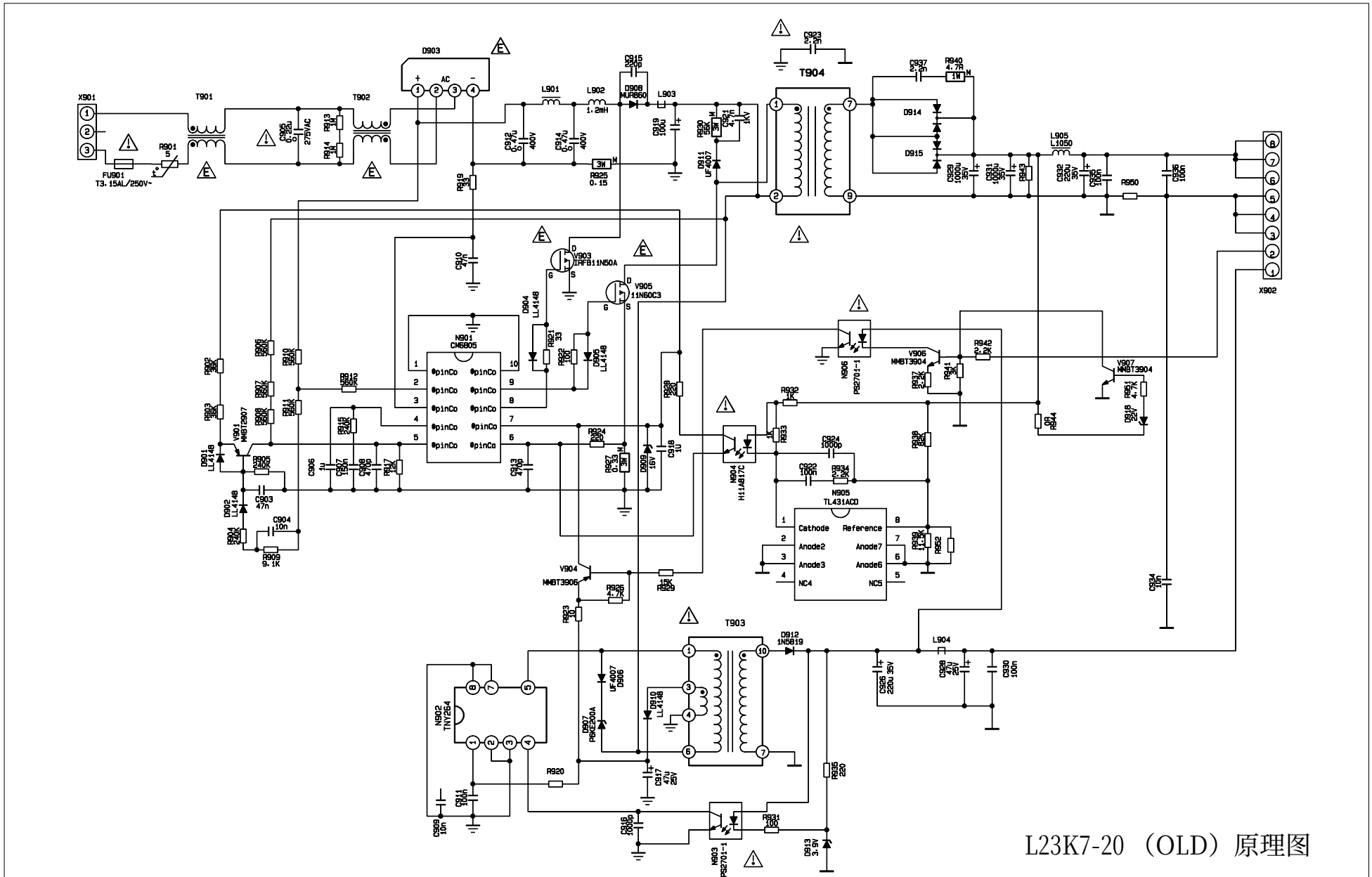
1

2

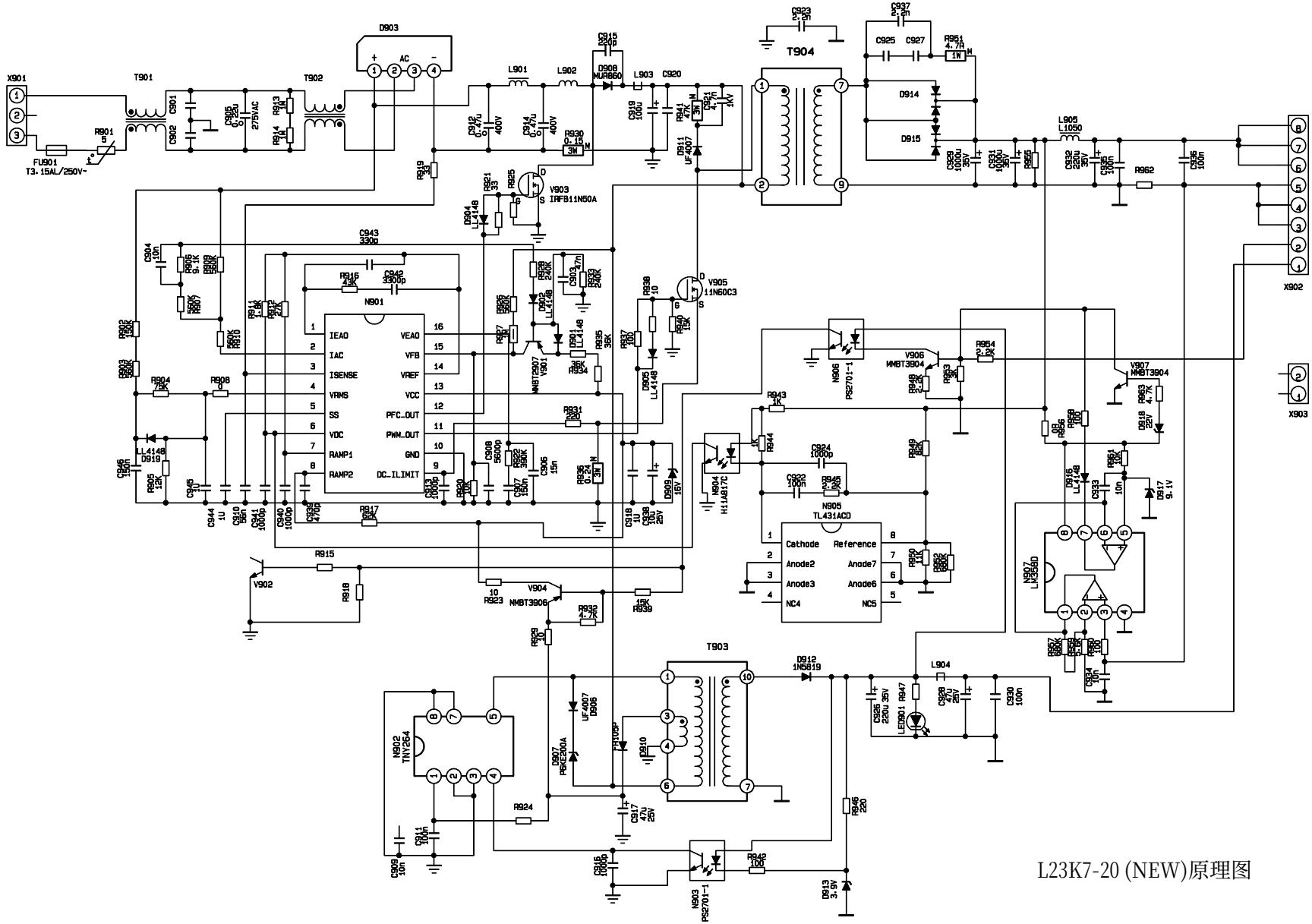
3



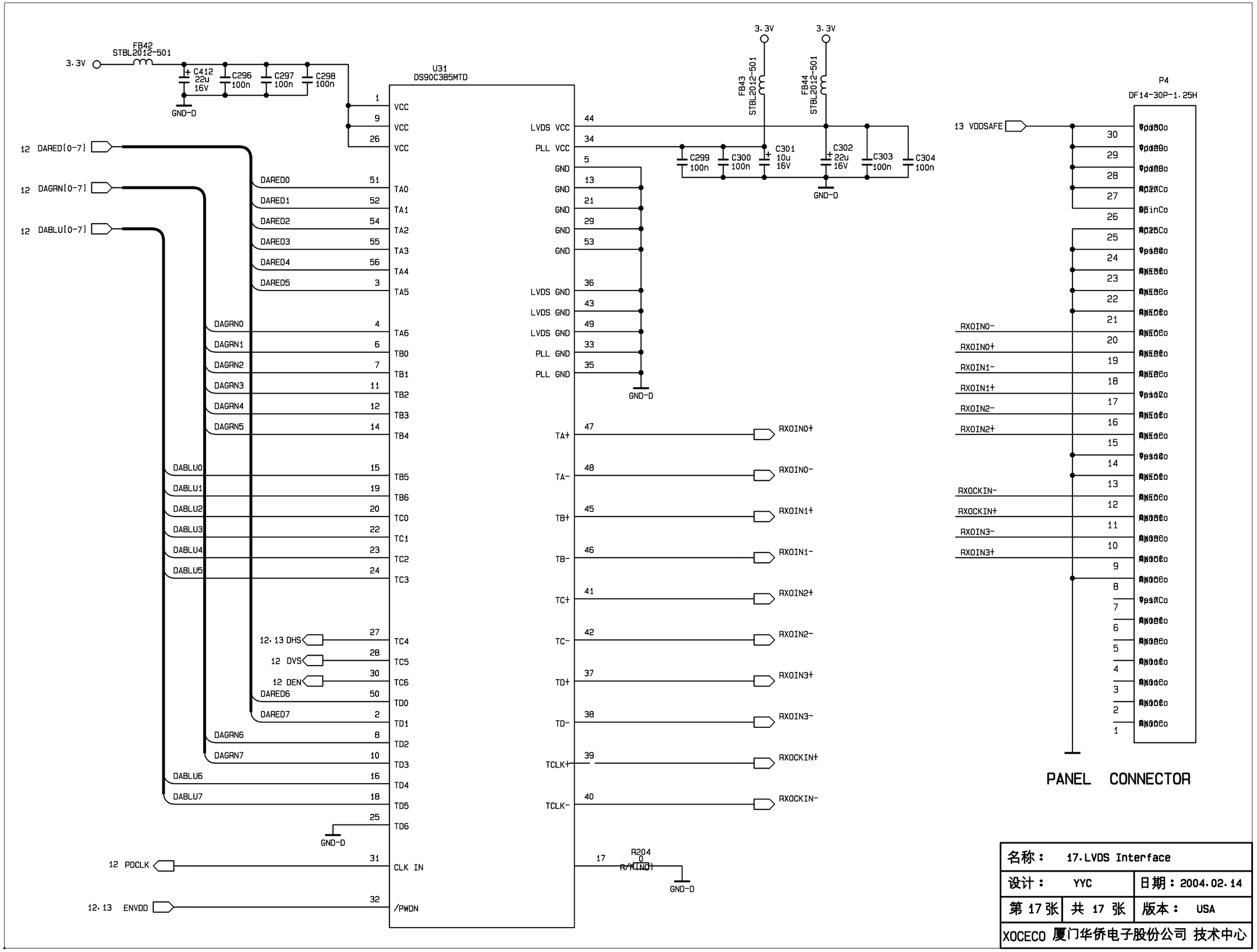
名称：	BUTTON	
设计：		日期：2004.02.25
第 1 张	共 1 张	版本： 1.0
XOCECO 厦门华侨电子股份公司 技术中心		



L23K7-20（OLD）原理图



L23K7-20 (NEW)原理图


FB42
STBL2012-501
3.3V
C412
22u
16V
C296
100n
C297
100n
C298
100n
GND-D
U31
DS90C385MTD
VCC
VCC
VCC
LVDS VCC
PLL VCC
GND
GND
GND
GND
GND
LVDS GND
LVDS GND
LVDS GND
PLL GND
PLL GND
FB43
STBL2012-501
FB44
STBL2012-501
C299
100n
C300
100n
C301
10u
16V
C302
22u
16V
C303
100n
C304
100n
12 DARED[0-7]
12 DAGRN[0-7]
12 DABLU[0-7]
DARED0
DARED1
DARED2
DARED3
DARED4
DARED5
DAGRN0
DAGRN1
DAGRN2
DAGRN3
DAGRN4
DAGRN5
DABLU0
DABLU1
DABLU2
DABLU3
DABLU4
DABLU5
12, 13 DHS
12 DVS
12 DEN
DARED6
DARED7
DAGRN6
DAGRN7
DABLU6
DABLU7
TA0
TA1
TA2
TA3
TA4
TA5
TA6
TB0
TB1
TB2
TB3
TB4
TB5
TB6
TC0
TC1
TC2
TC3
TC4
TC5
TC6
TD0
TD1
TD2
TD3
TD4
TD5
TD6
12 PDCLK
CLK IN
12, 13 ENVDD
/PWDN
TA+
TA-
TB+
TB-
TC+
TC-
TD+
TD-
TCLK+
TCLK-
RXOIN0+
RXOIN0-
RXOIN1+
RXOIN1-
RXOIN2+
RXOIN2-
RXOIN3+
RXOIN3-
RXOCKIN+
RXOCKIN-
17
R204
0
R/H(NC)
13 VDDSAFE
P4
DF14-30P-1.25H
PANEL CONNECTOR
名称： 17.LVDS Interface
设计： YYC
日期：2004.02.14
第 17 张
共 17 张
版本： USA
XOCECO 厦门华侨电子股份公司 技术中心

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U30

AD9883

U34

HEF4052BT

P34 HJR-613/P8-1

P35 HJR-413/P8-1

P24 JY-3541-01-030

P25 JY-3541-01-030

P37 TJC3-08A

AUDIO OUPT TO AV BOARD

名称：	16.HD INPUT	
设计：	YYC	日期：2004.02.14
第16 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

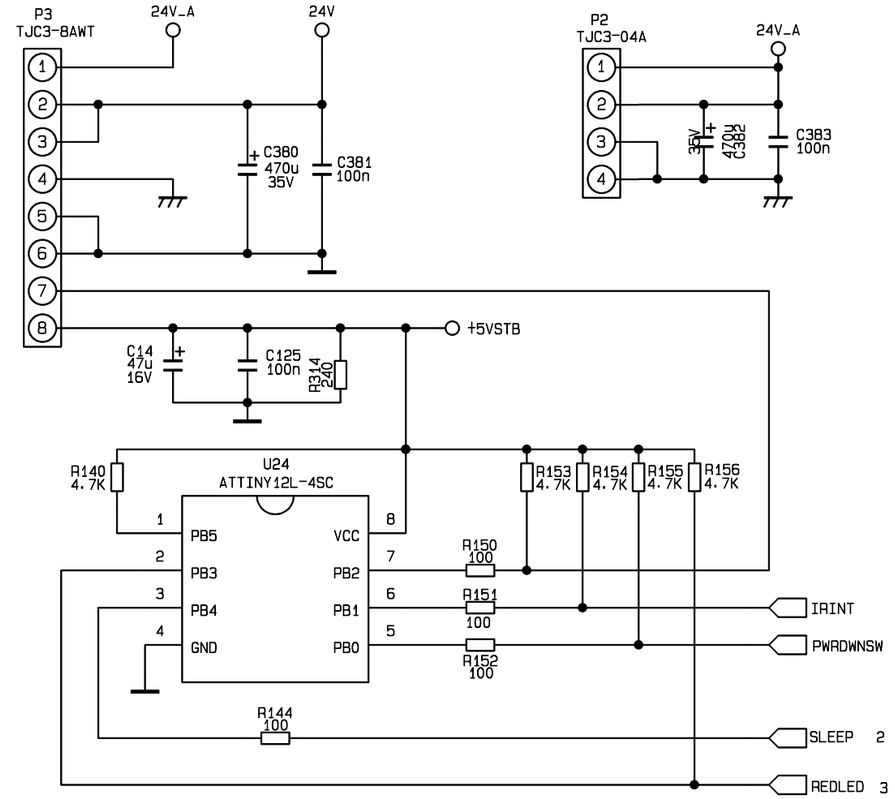
782-L27K6-5600

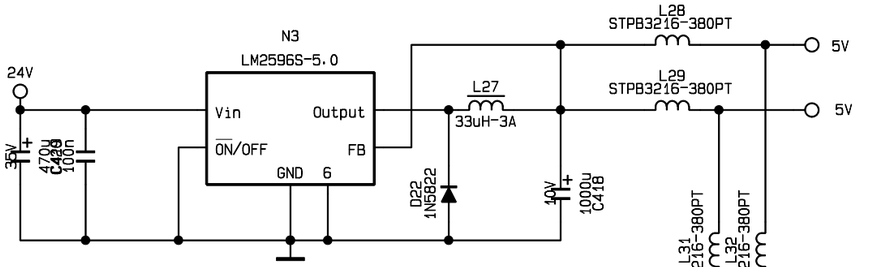
U29
VPC3230D

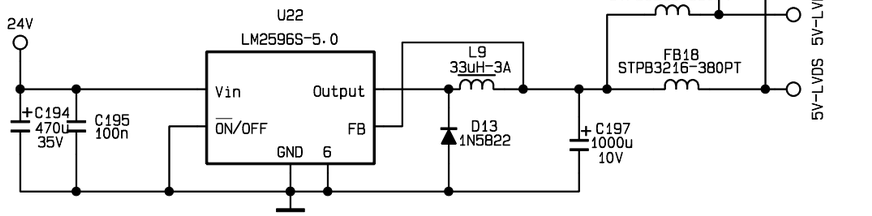
U32
Z86229125SC

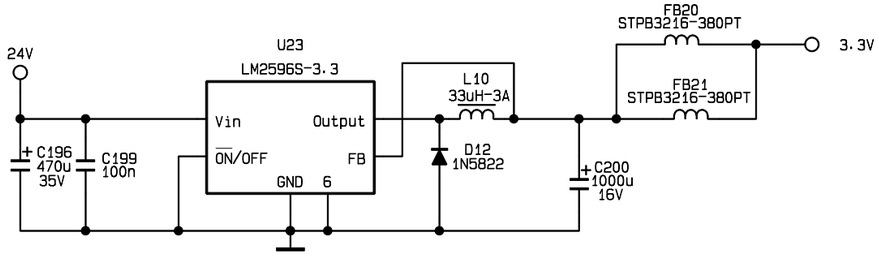
名称：15.VIDEO DECODER		
设计： YYC		日期:2004.02.14
第15张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

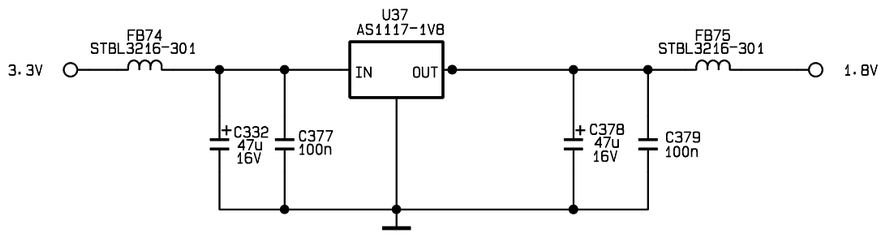
782-L27K6-5600

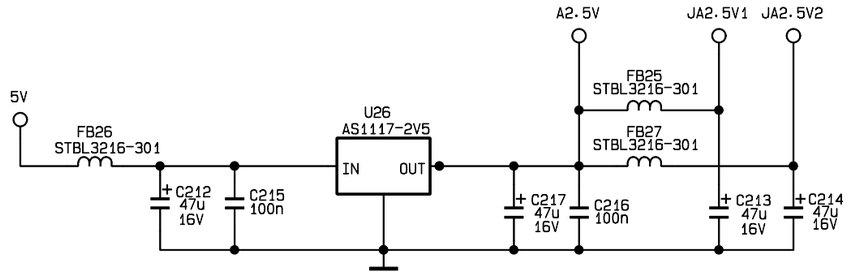


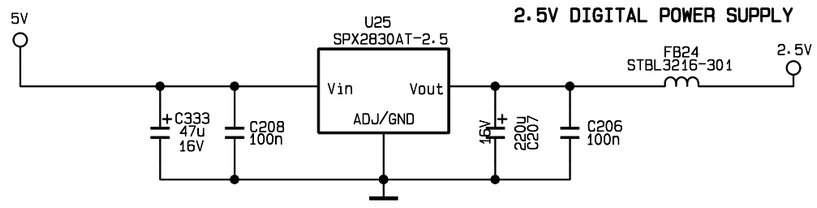






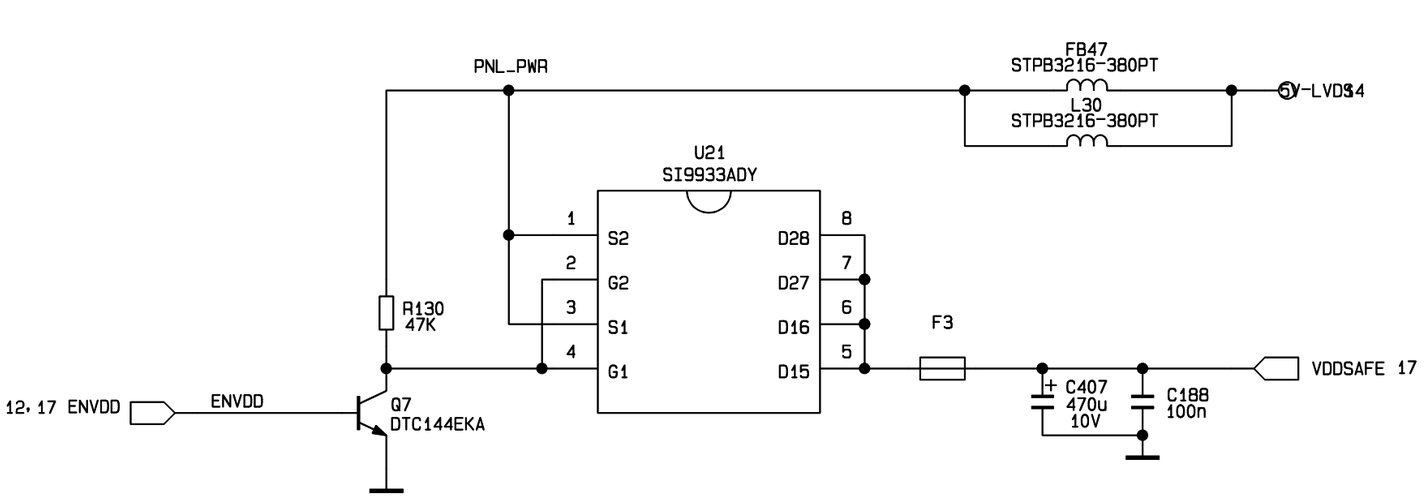


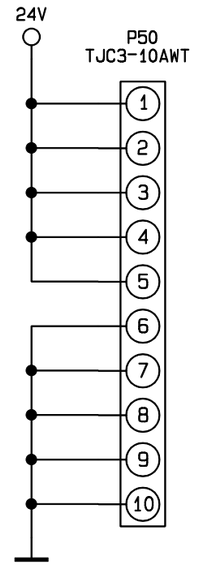


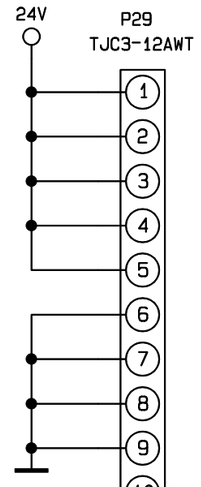


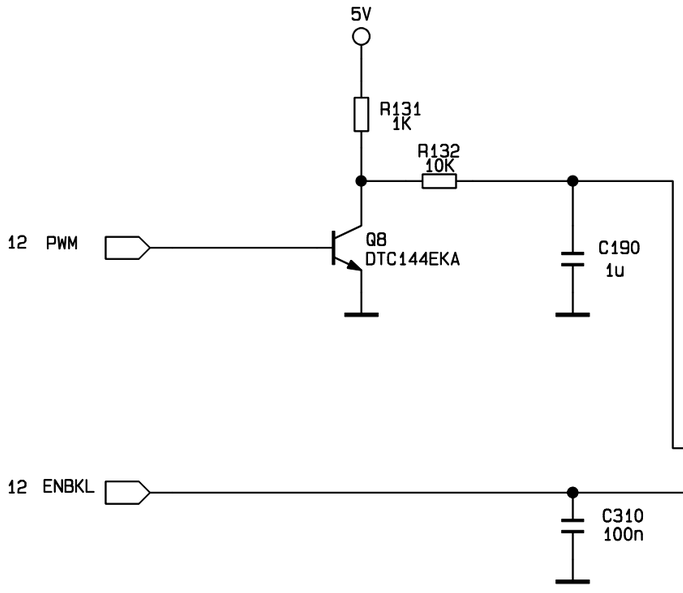
名称： 14.Power Supply		
设计： YYC		日期：2004.02.14
第14 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

782-L27K6-5600









名称 :13. Panel Power and Backlight		
设计 : YYC		日期 :2004. 02. 14
第13 张	共17 张	版本 : USA
XOCECO 厦门华侨电子股份公司 技术中心		

782-L27K6-5600

2.5V — FB16 STBL3216-301 — C181 100n, C182 100n, C183 1u — 3.3V — C184 1u, C185 100n, C186 100n

U12

JAGASM

VDDC: AC20, AC14, AC8

VDD: AF21, AF16, AF10

VSS: L11–L16, M11–M16, N11–N16, P11–P16, R11–R16, T11–T16

VSSA: AC22, AC17, AC11, AF19, AF13, AF8

PD0–PD47 → DARED0–DARED7 (RP28, RP29), DAGRN0–DAGRN7 (RP30, RP31), DABLU0–DABLU7 (RP32, RP33)

JVSYNC → DVS 17

JHSYNC → DHS 13, 17

JDE → DEN 17

JSHFCLK → PDCLK 17

RP34 22 → PNLCLK-S23CLK 6

B1 → R169 22 → PWM 13

AD21 → R39 22 → ENVDD 13, 17

AF22 → R38 22 → ENBKL 13

名称： 12.JAG-ASM Panel Interface		
设计： YYC		日期：2004.02.14
第12 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

10 SD[63-0]

10 TSA[10-0]

U19
MT48LC2M32B2TG

U20
MT48LC2M32B2TG

SDRAM ALTERNATIVES

FUJITSU MB811643242A

MICRON MT48LC2M32B2

SAMSUNG K4S643232C

DECOUPLING FOR SDRAMS

名称： 11.SDRAM Frame Buffer for Jag-ASM	
设计： YYC	日期：2004.02.14
第 11张 共17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心	

782-L27K6-5600

3.3V

C346 0.1u C347 0.1u C348 0.1u C349 0.1u C350 0.1u

GND-D

SD[63-0] 11

FB15 STBL3216-301 2.5V

C351 0.1u C352 0.1u C353 0.1u C354 0.1u

GND-D

SAME COPPER ISLAND ON L4

SAME COPPER ISLAND ON L4

JAGASM
U12

SD0	AD22	SDD000	
SD1	AE22	SDD001	
SD2	AC23	SDD002	
SD3	AD23	SDD003	
SD4	AE23	SDD004	
SD5	AC24	SDD005	
SD6	AD24	SDD006	
SD7	AE24	SDD007	
SD8	AF24	SDD008	
SD9	AC25	SDD009	
SD10	AD25	SDD010	
SD11	AE25	SDD011	
SD12	AF25	SDD012	
SD13	AD26	SDD013	
SD14	AE26	SDD014	
SD15	AB24	SDD015	
SD16	AB25	SDD016	
SD17	AB26	SDD017	
SD18	AA23	SDD018	
SD19	AA24	SDD019	
SD20	AA25	SDD020	
SD21	AA26	SDD021	
SD22	Y23	SDD022	
SD23	Y24	SDD023	
SD24	Y25	SDD024	
SD25	W24	SDD025	
SD26	W25	SDD026	
SD27	W26	SDD027	
SD28	L23	SDD028	
SD29	L24	SDD029	
SD30	L25	SDD030	
SD31	K24	SDD031	

SD[63-0]

A25	SD63	SDD063	
A24	SD62	SDD062	
B26	SD61	SDD061	
B25	SD60	SDD060	
B24	SD59	SDD059	
B23	SD58	SDD058	
C26	SD57	SDD057	
C25	SD56	SDD056	
C24	SD55	SDD055	
C23	SD54	SDD054	
D26	SD53	SDD053	
D25	SD52	SDD052	
D24	SD51	SDD051	
E26	SD50	SDD050	
E25	SD49	SDD049	
E24	SD48	SDD048	
E23	SD47	SDD047	
F25	SD46	SDD046	
F24	SD45	SDD045	
F23	SD44	SDD044	
G26	SD43	SDD043	
G25	SD42	SDD042	
G24	SD41	SDD041	
H26	SD40	SDD040	
H25	SD39	SDD039	
H24	SD38	SDD038	
H23	SD37	SDD037	
J25	SD36	SDD036	
J24	SD35	SDD035	
J23	SD34	SDD034	
K26	SD33	SDD033	
K25	SD32	SDD032	

SA0	V23	SDA0	
SA1	V24	SDA1	
SA2	V25	SDA2	
SA3	V26	SDA3	
U23		SDA4	
U24		SDA5	
U25		SD6	
P25		SDA7	
P26		SDA8	
N24		SDA9	
N25		SDA10	

M25		DQS	
M24		BANK	
M23		DQM	
M26		SDCS0	
P23		SDCKN	
P24		SDRAS#	
R25		SDWE#	
R24		SDCKE	
T26		SDCAS#	
R23		SDCKP	
T25		SDCKFB	
T24	MCCLK	MEMCLK	

VDD: A25 J26 N25 U26 Y26 AF26 D23 K23 T23 AB23 D21

VDDC: D23 K23 T23 AB23 D21

VSS: A23 F26 L26 R26 AC26 AF23 G23 N23 W23

GND-D GND-D

RP17 22: TSA0 TSA1 TSA2 TSA3

RP19 22: TSA6 TSA5 TSA4

RP21 22: TSA8 TSA7 TSA10 TSA9

TSA[10-0] 11

RP18 22: DQM BA0 CS# BA1

R122 0 R123 0

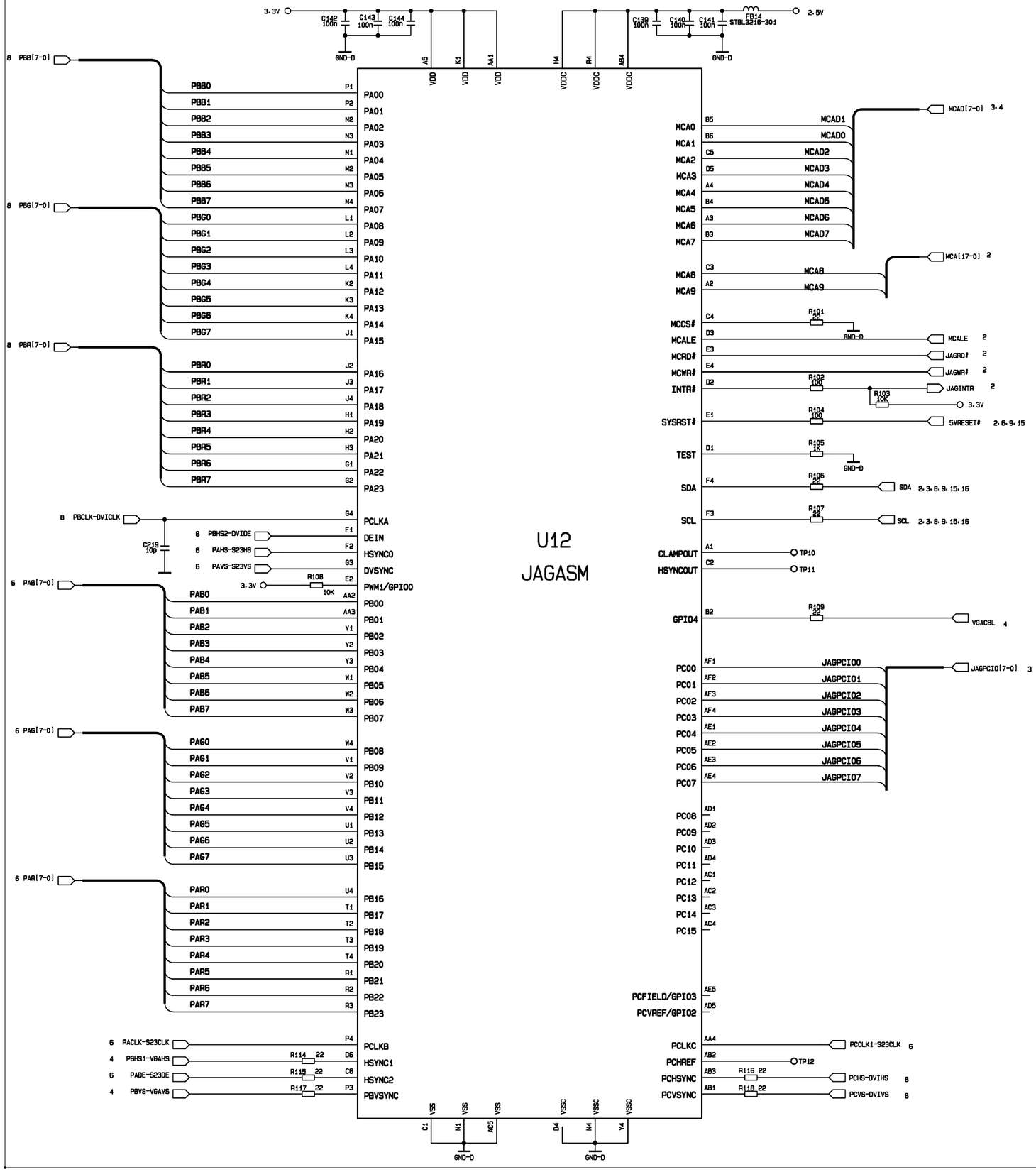
RP20 22: RAS# WE# CAS# CKE

R124 0

R125 22

TSDQM 11
TSBA0 11
TSCS# 11
TSBA1 11
TSRAS# 11
TSWE# 11
TSCAS# 11
TSCKE# 11
TSCLK 11
MCCLK 2

名称： 10.JAG_ASM SDRAM Interface		
设计： YYC		日期：2004.02.14
第10 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		



782-L27K6-5600

S2300

DATA PORT-B
CLOCK PORT-B, C
SYNC PORT A
DE PORT B

DVI

DATA PORT-A
DE PORT-A
CLOCK PORT-A
SYNC PORT-C

VGA

AN1- R, G, B
SYNC
PORT-B

CCIR656

DATA PORT-C
SYNC EMBEDDED
CLOCK PORT-C
FIELD PORT-C

名称： 9.JagAsm Digital Input Interface		
设计： YYC		日期：2004.02.14
第 9 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

782-L27K6-5600

TMDS INPUT

U15

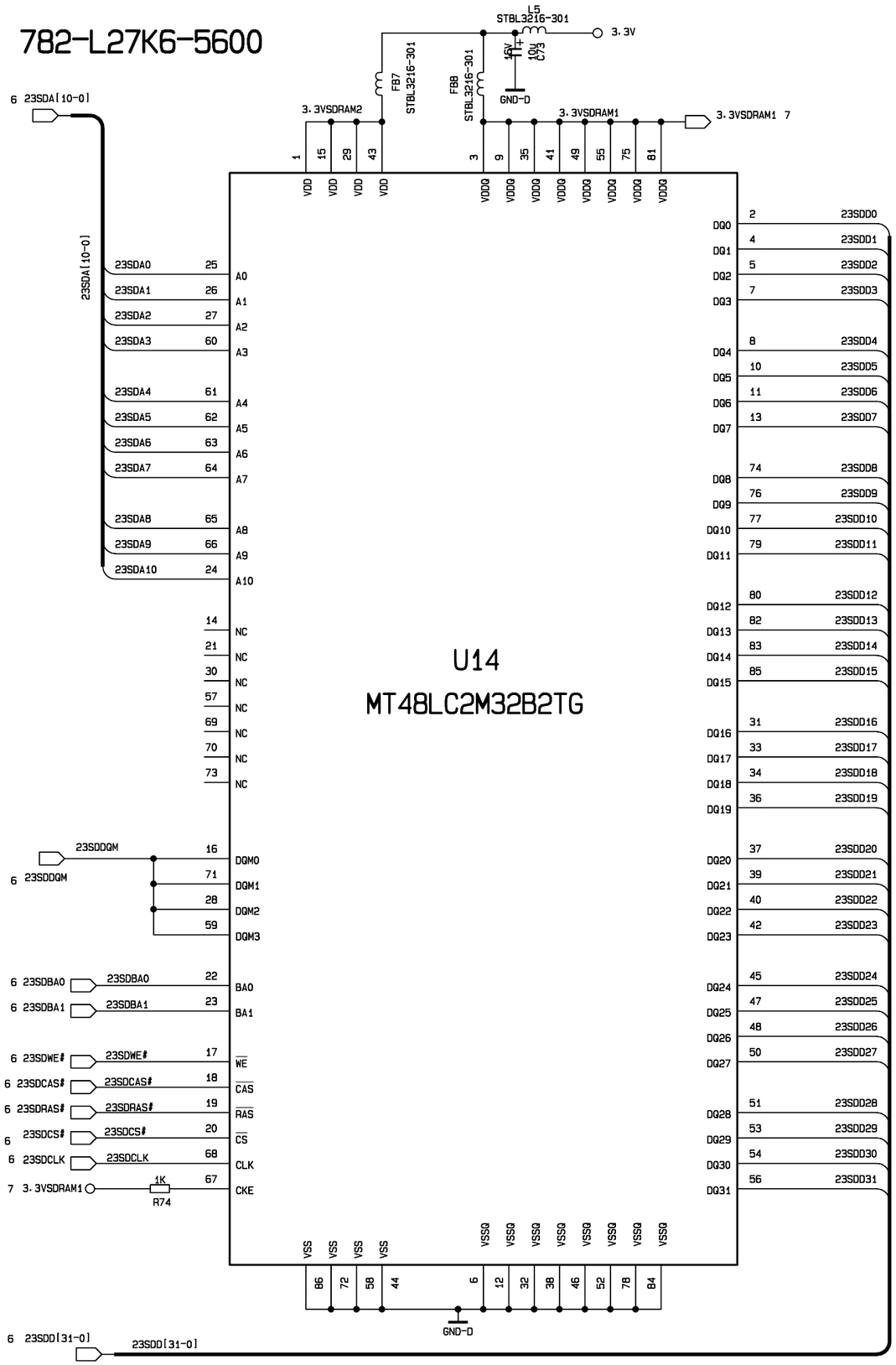
TFP403

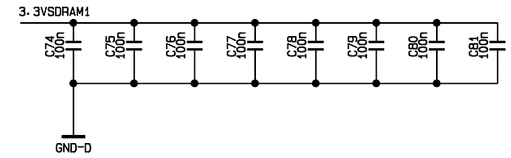
EDID EEPROM

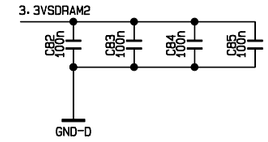
HDCP EEPROM

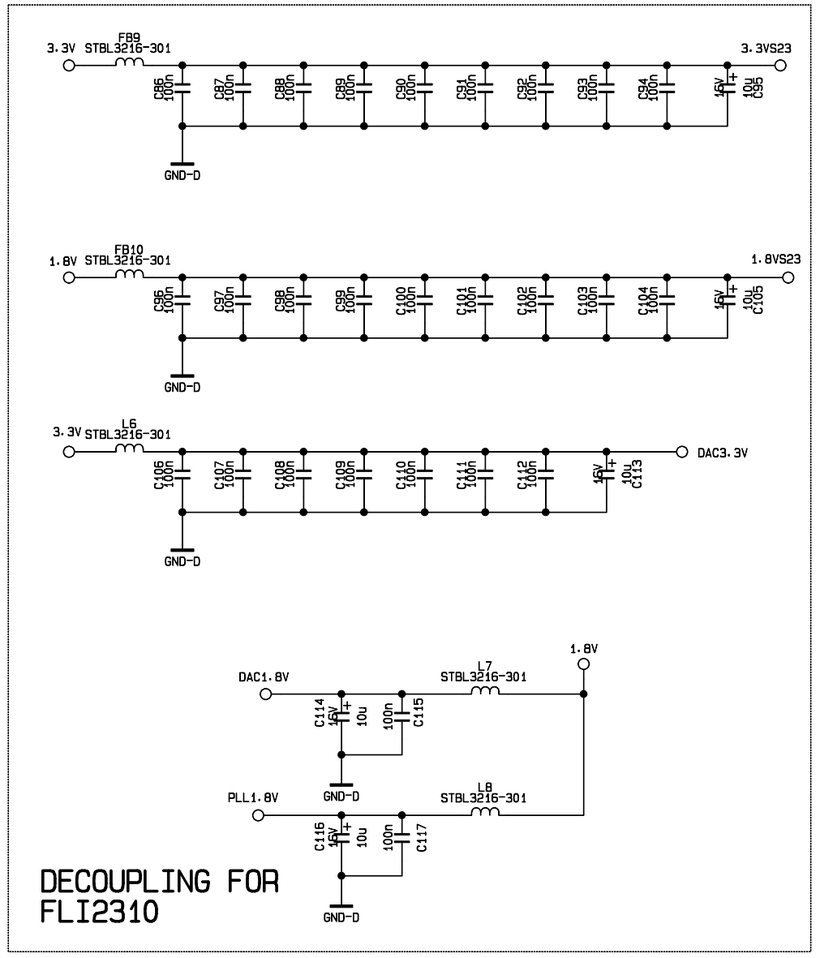
名称： 8.DVI Interface		
设计： YYC	日期：2004.02.14	
第 8 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

782-L27K6-5600









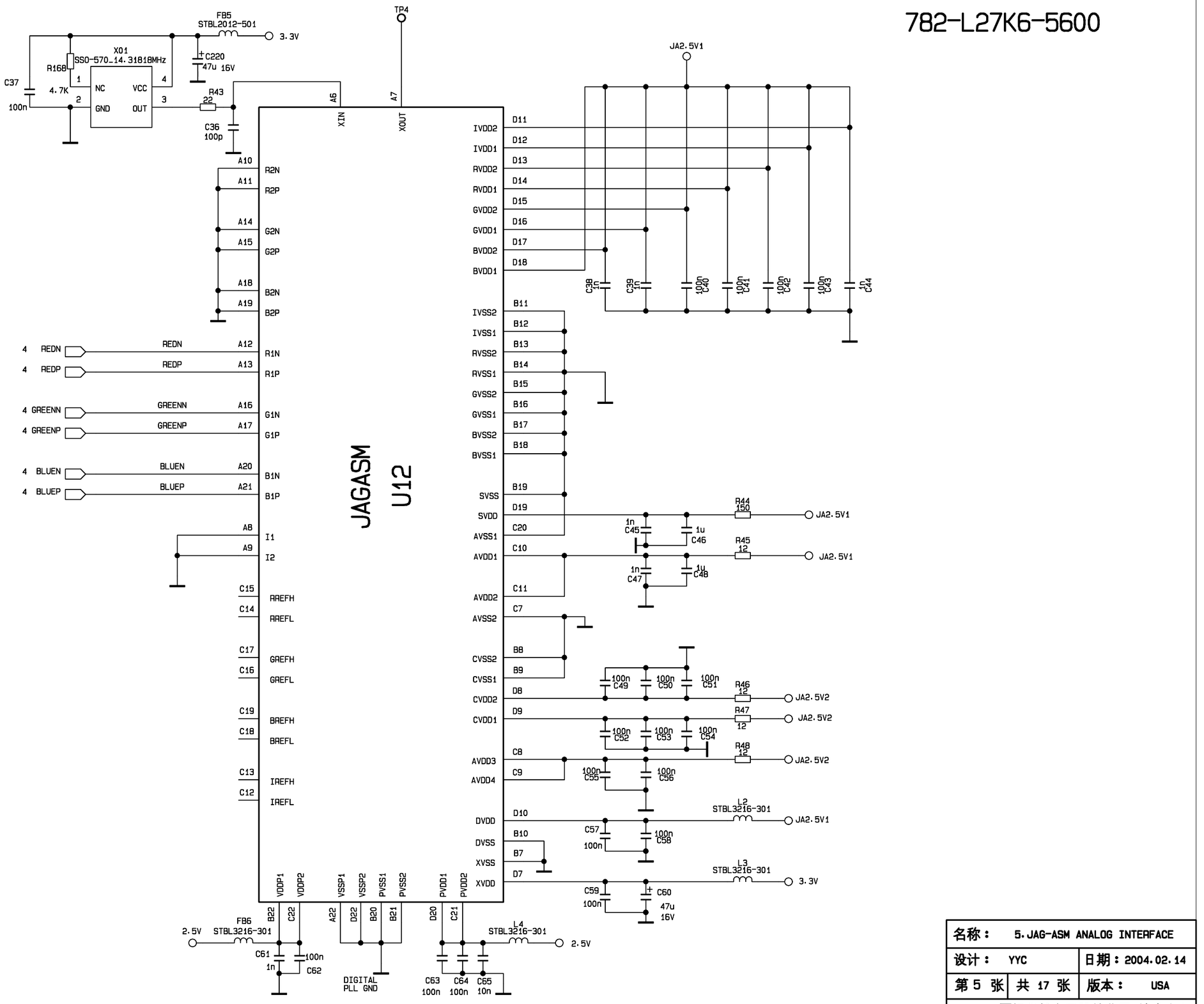
名称： 7.SDRAM for FIL2310		
设计： YYC		日期：2004.02.14
第 7 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

782-L27K6-5600

U13

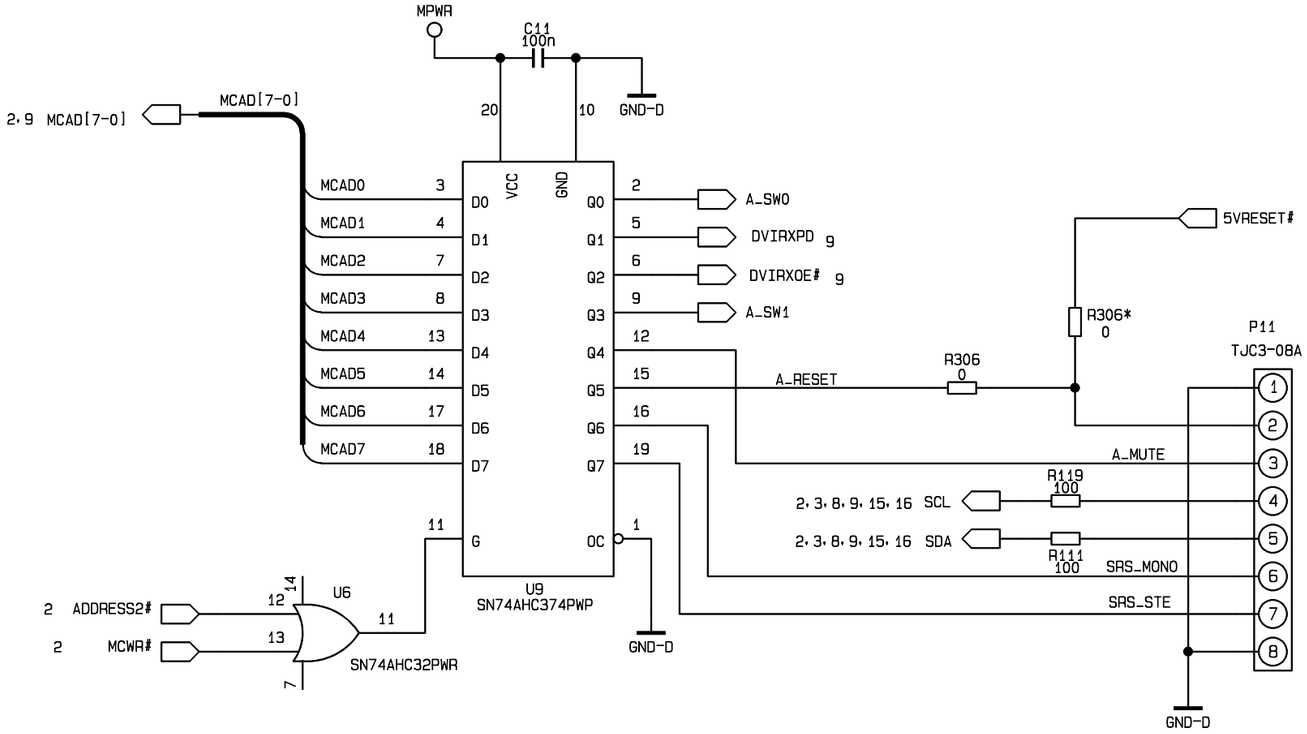
S2300

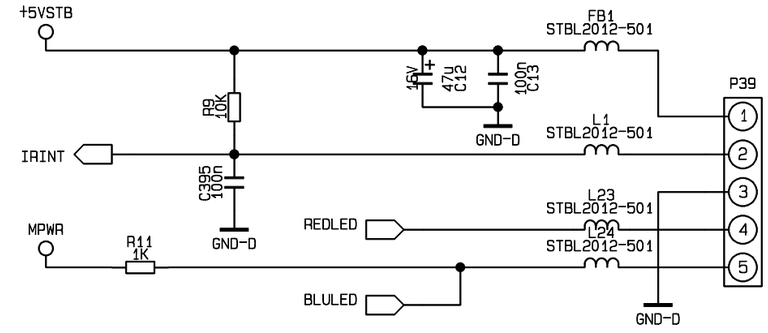
名称：	6.FLI2310 De-Interface		
设计：	YYC	日期：	2004.02.14
第 6 张	共 17 张	版本：	USA
XOCECO 厦门华侨电子股份公司 技术中心			



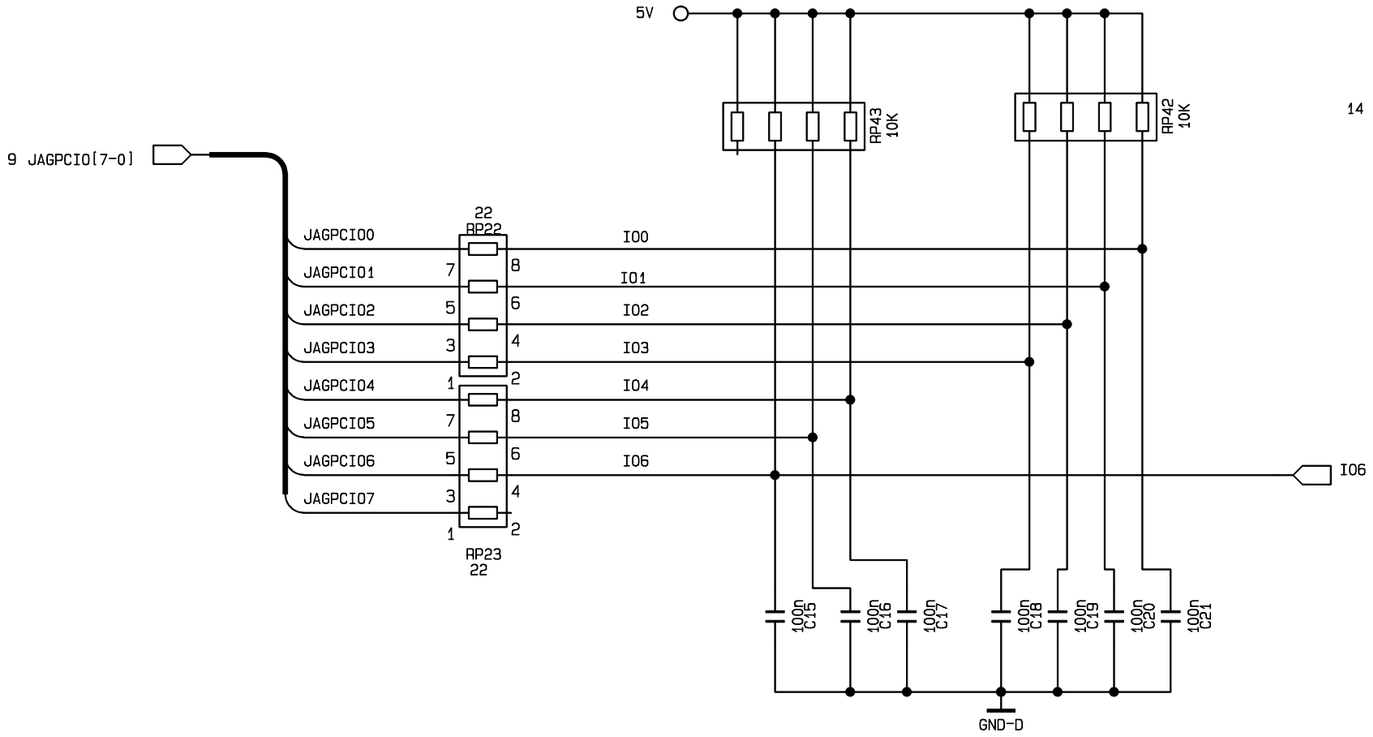
名称： 5.JAG-ASM ANALOG INTERFACE		
设计： YYC		日期：2004.02.14
第 5 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		

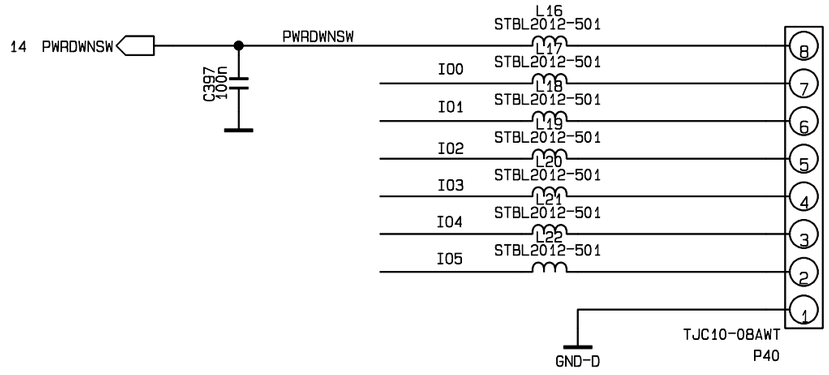
782-L27K6-5600





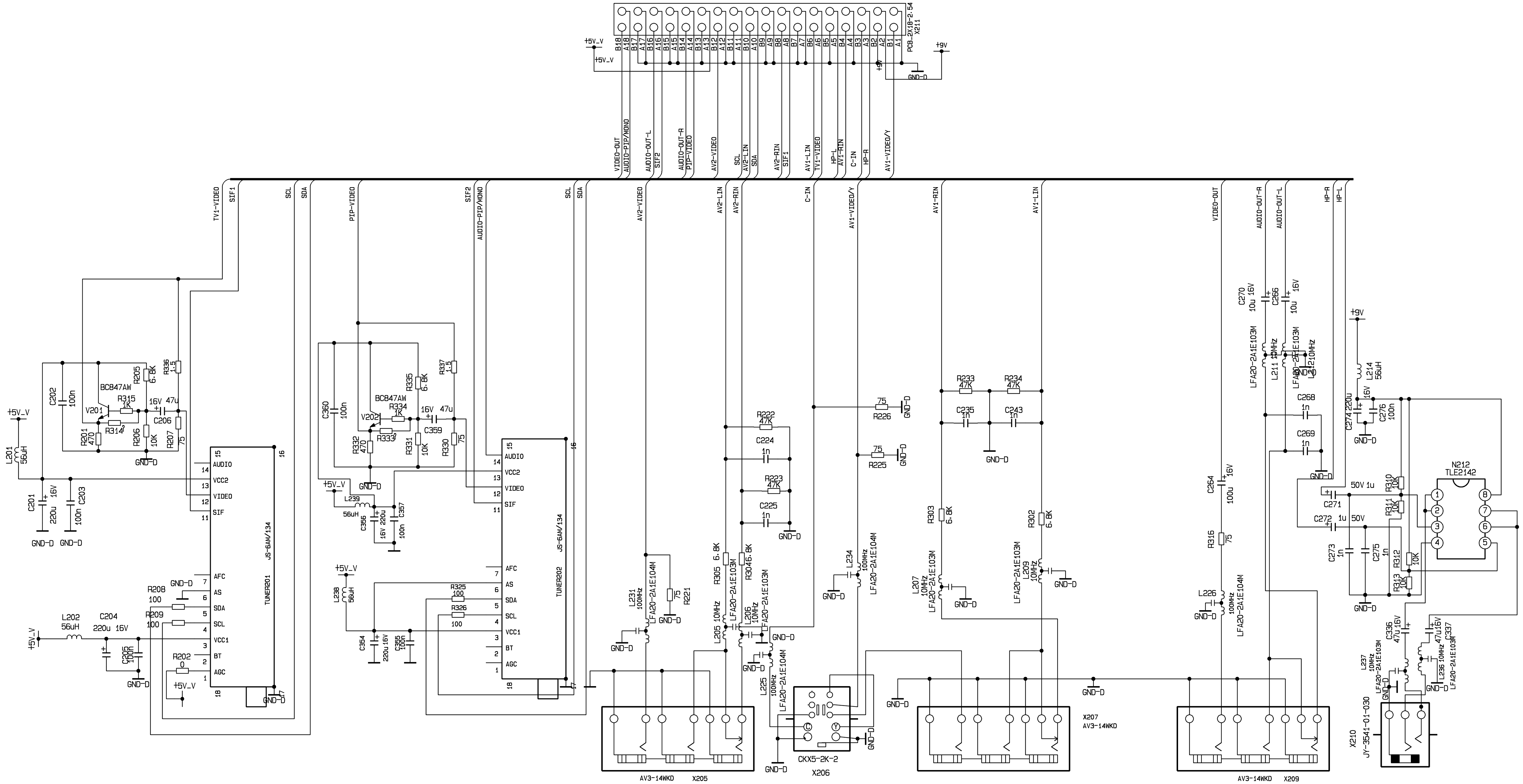
IR&LED
INTERFACE





KEYBOARD INTERFACE

名称： 3.IO Ports and IR Interface		
设计： YYC		日期：2004.02.14
第 3 张	共 17 张	版本： USA
XOCECO 厦门华侨电子股份公司 技术中心		


PCB-2X18-2.54
X211
+5V_V
+9V
GND-D
B18 A18 B17 A17 B16 A16 B15 A15 B14 A14 B13 A13 B12 A12 B11 A11 B10 A10 B9 A9 B8 A8 B7 A7 B6 A6 B5 A5 B4 A4 B3 A3 B2 A2 B1 A1
VIDEO-OUT
AUDIO-PIP/MONO
AUDIO-OUT-L
SIF2
AUDIO-OUT-R
PIP-VIDEO
AV2-VIDEO
SCL
AV2-LIN
SDA
AV2-RIN
SIF1
AV1-LIN
TV1-VIDEO
HP-L
AV1-RIN
C-IN
HP-R
AV1-VIDEO/Y
BC847AW
V201
R315 1K
R314
R205 6.8K
R336 1.5
C206 16V 47u
R201 470
R206 10K
R207 75
C202 100n
L201 56uH
C201 220u 16V
C203 100n
TUNER201
JS-6AM/134
AUDIO VCC2 VIDEO SIF AFC AS SDA SCL VCC1 BT AGC
R208 100
R209 100
R202 0
L202 56uH
C204 220u 16V
C205 100n
V202
R334 1K
R333
R335 6.8K
R337 1.5
C359 16V 47u
R332 470
R331 10K
R330 75
C360 100n
L239 56uH
C356 220u 16V
C357 100n
L238 56uH
C354 220u 16V
C355 100n
R325 100
R326 100
TUNER202
L231 100MHz LFA20-2A1E104M
R221 75
R305 6.8K
R304 6.8K
L205 10MHz LFA20-2A1E103M
L206 10MHz LFA20-2A1E103M
L225 100MHz LFA20-2A1E104M
R222 47K
C224 1n
R223 47K
C225 1n
R226 75
R225 75
L234 100MHz LFA20-2A1E104M
AV3-14WKD X205
CKX5-2K-2
X206
R233 47K
R234 47K
C235 1n
C243 1n
R303 6.8K
R302 6.8K
L207 10MHz LFA20-2A1E103M
L209 10MHz LFA20-2A1E103M
X207
AV3-14WKD
C270 10u 16V
C266 10u 16V
L211 10MHz LFA20-2A1E103M
L210 10MHz LFA20-2A1E103M
C268 1n
C269 1n
C264 100u 16V
R316 75
L226 100MHz LFA20-2A1E104M
AV3-14WKD X209
L214 56uH
C274 220u 16V
C276 100n
N212
TLE2142
C271 50V 1u
C272 1u 50V
C273 1n
C275 1n
R310 10K
R311 10K
R312 10K
R313 10K
C336 47u 16V
C337 47u 16V
L237 10MHz LFA20-2A1E103M
L236 10MHz LFA20-2A1E103M
X210
JY-3541-01-030

名称：	VIDEO PROCESS		
设计：	LZHH	日期：	
第　张	共　张	版本：	
XOCECO 厦门华侨电子股份公司 技术中心			